Home Computing WEEKLY

An Argus Specialist Publication

Britain's leading weekly magazine for software reviews

No. 53
March 13-19, 1984

40p

Software reviews for: Spectrum, BBC, VIC-20, Texas, Commodore 64, Dragon, Atari and Electron

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sinclair

Listings for your Commodore 64

How to get more into your Microdrive

Make Dragon programs run on the Spectrum

PLUS programs to type in for Spectrum, VIC-20, Oric, TI

AND your letters, charts, news, U.S. Scene...

Killer Knight
48K ZX Spectrum
SPECTRUM
SPECTIPEDE
R&R
16K
LASER ZONE
Salamander
Acorn Electron
AIRLINE
...TEGY GAMES
FOR THE SEASON
MOGUL
PYRAMID
VORTEX

'Bust to follow boom'

Some software companies could go to the wall soon, hit by the twin problems of both producing too many and too few games tapes.

Although sales are now picking up — and there could be a mini boom at Easter — many software houses over-estimated post-Christmas sales.

The story began several months ago when they were trying to judge the Christmas market. Being a young industry, they had few facts on which to make decisions.

The bulk produced too many tapes and they were left on the shelves and some produced about the right number.

A small number failed to have enough tapes duplicated. Thinking that new computer owners would carry on buying into February, they placed new orders.

But those sales did not take place.

Distributors differ on when the market dipped after Christmas.

Bob Simpson, boss of PCS Distribution, said sales

Continued on page 5

Our Price software

Our Price is out to do for software what the company started with records.

At the end of the month the company is opening its first store selling home computer software only.

And, if successful, it could grow to a chain, like Our Price records which now has 77 shops offering titles with chart placings at a discount.

Our Price financial director Barry Hartog spoke cautiously, however.

He said: "We are testing the water. After all, it's a similar product to one we already sell — audio tapes — in that the price and the size is the same, and so is the age group and profile."

The shop will be in Market Square, St Albans, just vacated by an Our Price record store which has moved to new premises.

He stressed that Our Price

Continued on page 5

NEW FROM THE GODS

Thor
Games from the Gods

FOR ANY SPECTRUM ✓SPEECH

Mega Fruit by Bob Hitching
This is the ultimate fruit machine with all the features of the real Arcade machines, such as Nudge Hold Gamble etc

3D
SILICON FISH

FOR THE UNEXPANDED VIC 20 and the CBM 64

3D Silicon Fish by Chris Stamp
Sifi has to collect Silicon and return to Earth before the Krlyon destroys him Will he make it and collect his reward? Only you can tell

Pyramid Painter

FOR THE BBC B

Pyramid Painter by Chas Smith
Can you help Bert the painter finish off the pyramids before the balls or Thin Man finishes him?

SPIDERS WEB

FOR ANY SPECTRUM ✓SPEECH

Spiders Web by Peter Milne
Micky is a greedy little spider He traps lots of Flies and Wasps on his web and then stores them to eat later but it s tough for Micky as the Flies bite back.

ALL PROGRAMS ONLY £5.95

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& PACKING BY RETURN

Desperate Dan

FOR THE BBC B

Desperate Dan by Reiner Bjorkell
Deep down in Dan s dungeons are the ghastly monsters he keeps them at bay with liquid dantanium. This liquid is very sweet and is liked by several rodents Dan is desperate for help to keep the creatures at bay Can you help?

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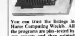
Low cost printer

Swiss company Ibico has launched its first letter quality printer, the LTR 1. A compact portable unit, it uses a pre-inked replaceable roller to produce crisp lettering. Standard typeface is Elite 12 pitch, and the price is £230. You have a choice between Centronics parallel or RS232 serial interfaces although Centronics is standard. Claimed head life is 20 million characters while ink roll life is 100,000 characters

Ibico Ltd, 181 Spring Grove Road, Isleworth, Middlesex



You can trust the listings in Home Computing Weekly. All the programs are play-tested by our experts and then printed out in our computer room

Spot the words and you could win a share of £1,000-worth of great Sinclair Research software for your Spectrum and ZX81. Turn to our competition page now

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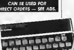

There are programs to type in for all these computers in this week's issue

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Okay I dare take my computer to the edge of meltdown. Send me the following

Cookie	Lunar Jetman	Pssst	Tranz Am
Jet Pac	Jet Pac – Expanded VIC 20		Atic Atac

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Name
Address

Code

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ULTIMATE
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Ultimate Play The Game is a trade name of Ashby Computers and Graphics Ltd The Green Ashby de la Zouch Leicestershire Tel (0530) 411485 Dealer enquiries welcome

Software problems

From front page

decreased markedly after January

If the weather keeps people indoors at their computers he expects a mini boom at Easter and then poor sales through the summer

He said "While simmering, but not bubbling, it's doing quite nicely now"

George Bradbury, buyer for W.H. Smith, said the dip occured later in January and expects a rise next month

He also said that there are now so many titles being released that Smiths drop and replace with new titles far more frequently than before He also urged software houses to reproduce a picture of the screen on the cassette insert so customers could see what they were buying

Websters, another distribution company, said sales dipped in February But sales and marketing manager Jennifer Trus said "Trade has started to take off again"

And she agrees that some software companies face severe cash-flow problems

She said "Some people will find it very difficult I couldn't tell you how many It's a shame really But just as many new firms will start up"

She believes that there will also be a rationalisation because computer users are becoming more discerning — they want top quality and will not be satisfied with less

Websters is producing a video tape for showing in stores so customers can preview games Planned as a monthly issue, it will contain extracts from top-sellers

Our Price

From front page

was not going into software for a quick profit He said "If we thought it was only short term we would not be interested"

The shop would stock software for the Spectrum, BBC, Commodore 64, VIC-20 and Oric

Unlike bigger record stores, the company was not planning software sections in existing stores — they were not big enough

In any case, said Mr Hartog, the job could not be done properly if the products were mixed

Our Price founders Garry Nesbitt and Michael Isaacs had just become millionaires when the company went onto the Stock Market

They began the company in 1971 when Mr Nesbitt, 41, then an executive with a casino company, wanted to buy a blues tape but found the only specialist store in central London was closed Four years later Our Price expanded into records

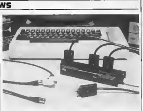
Spaghetti junction

If your living room is knee-deep in cable, Electro Replacement has come up with a way to clear the carpet again Its Multiplying mains distribution unit can be mounted on the wall or hidden behind your computer, and provides a single cable outlet for up to four pieces of equipment

The unit is rated at 13 amps and can handle up to six amps at each outlet Price: £7 95

Electro also makes a TV Aerial Adaptor which allows you to switch back and forth between your TV aerial and computer without having to unplug either It costs £1 50

Electro Replacement, Wembley Commercial Centre, Unit 2, 11 East Lane North Wembley, Middlesex HA9 7UJ



Tidier carpets with the ERI Multiplug

64 mag due out on tape

Commodore 64 users will soon have their own tape magazine

Due out at the end of the month, 64Tape Computing occupies both sides of a C30 tape and includes a Frogger game, an adventure, sprite editor and an assembler/disassembler

It is the fifth tape magazine from Argus Press Software, owned by the same company that publishes Home Computing Weekly

The others are Spectrum Computing, Model B Computing, VICTape Computing Computing and Atari Computing

All are bi-monthly and cost £3 99

Editor of 64Tape is Peter Gerrard, author of books and software and an ex-Commodore employee

● APS, formed in January, has taken on the marketing rights of the Clever Clogs range of educational software by Computer Tutor'

Argus Press Software, No 1 Golden Square, London W1R 3AB

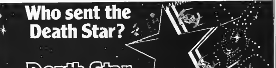
Strike Commander joystick

Slimline joystick

New for April will be the Strike Commander Joystick, from Consumer Electronics Designed for the Dragon and BBC, the short slimline joystick has firing buttons in both thumbcap and side of body while the chunky square edged construction is designed for maximum convenience

Strike Commander comprises two joystick units complete with cables and plugs and costs £16 95

Consumer Electronics Ltd, Failsworth, Manchester M35 0HS



RRP £5.99 inc VAT
For CBM 64 & ZX Spectrum 48K

Cup of tea with the Microsight

More Vision

Following its launch of the Microsight system, Digithurst has now announced two more software packages for it.

The standard Microsight software is able to calculate areas and perimeters, BBC Hi-Res displays a 256 x 256 image in MODE 0, taking advantage of the Micro Eye interface. Photo Graphics Package displays a 256 x 256 image in MODE 2 and uses colours on a monochrome display to represent greyscales. An RGB filter system including software is available for displaying true colour images in MODE 2. Price £99. The Microsight system, including camera, software and documentation, costs £495.

Digithurst Ltd, Leaden Hill, Orwell, Royston, Herts SG8 5QH

Spots before the eyes?

Activision launches the ultimate in freak-outs! It's called Megamania and you are the pilot of a space ship confronted by floating dice, bow ties, diamond rings and other weirdies. You must destroy the oddments with your laser. Reach a score of 70,000 or more and you qualify as an official Megamaniac. Just send a photo of your on-screen score and you will get a sew-on badge. Megamania costs £29.95 and runs on the Atari 400, 600 and 800.

Activision Software Ltd, Goldins Hill, Loughton, Essex IG10 2RR

Heavy duty recorder

New on the market is the Bell and Howell 3179CX heavy duty cassette recorder, developed for use with BBC and other computers. The specially beefed up construction has been designed with schools in mind.

Unlike the majority of cassette recorders used for data storage, the 3179CX is based on a recorder designed specifically for use in schools. B & H is one of the largest manufacturers of audio visual equipment in the world.

The operating keys have symbols in relief so blind people can operate the recorder. Price £39.95.

Bell and Howell, Alperton House, Bridgewater Rd, Wembley, Middlesex HA0 1EG

Bell and Howell heavy duty recorder

Now let us have our say

I would like to address myself through the auspices of HCW to the hoary old chestnut of The Computer Software Piracy Debate. When I say "debate" I am using the term loosely — so far it has been decidedly one-sided.

We have all been bombarded with stories of the billions of pounds a year that the software industry is apparently losing through illegal copying. These claims invariably come from indignant and publicity hungry software companies positively screeching about the injustice of it all. Each report quotes phenomenal figures, and each set of figures succeeds in contradicting the others, although each has been carefully calculated.

I have not yet seen anyone stand up for the software users and state our case. We have all been taken for a ride for far too long — ever since the very beginning, in fact — by all concerned with the computer industry. Computer prices were fixed on what the market would bear. This had very little to do with the actual cost of the computer. When startling price reductions were made the computer firms saw themselves as being very generous. In reality, however, the prices were only coming down to the correct level. High profits are seen as the sign of a successful company, but this success has been achieved by squeezing money out of the consumer.

This has got to be said of the software houses too. We have all read about huge profits and of the money that teenage "whizz kids" can make along with perks, such as cars of their own choice (when they are old enough to drive), that the companies lavish upon them, only because they are frightened of losing the goose that lays the golden egg.

The companies have been making these profits while all this "horrific" software piracy has been going on. Now they've woken up to the truth. They've found out what has been going on and their greed has gone into overdrive. They imagine all those copies of games being made and think of all the lost profits, calculating their losses on the price and profit that would be realised if they had sold those copies.

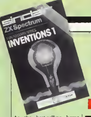
Software houses direct all their claims of piracy against poor schoolchildren. I use the adjective "poor" advisedly. School children couldn't possibly afford to buy all the copied software they use. I admit that this in no way excuses their actions, but surely it shows how ridiculous such claims are? There are also claims that some junior racketeers are charging their classmates 50p a time to copy their software. Perhaps there are some isolated incidences, but in my experience this certainly isn't the norm. Schoolboys aren't so mercenary. They certainly swap programs with each other to copy, but they don't sell. It also seems to be implied that all software is available all the time on this black market. People do still buy software when it comes out — if it's any good — because they don't want to have to wait until they can copy it from a friend. If software copying could be stamped out entirely I am sure that software sales would rise by less than 10 per cent.

I would like to make it clear that I am in no way condoning any software copying — especially not pirated software, in the sense that it is illegally copied and then sold commercially. Ordinary Joe Public copies records and audio tapes, yet there are now few indignant screeches that they are depriving EMI, Barry Manilow and Duran Duran of their hard earned money. They've survived this copying on a much larger scale and for a much longer period, so why the outcry at software copying for private use?

Perhaps I am addressing my comments to the wrong audience — every computer owner I know is an aspiring software author. I just hope I have made my views heard in the hub-bub of accusations.

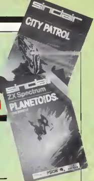
A S Wright
Sixth-former and computer enthusiast
Altringham, Cheshire

● This space is for you to sound off about the micro scene, to present bouquets, to hurl brickbats, or just to share your opinions or experiences. Contributions from individuals earn a fee. Sent your views to Paul Liptrot, Editor, Home Computing Weekly, No. 1 Golden Square, London W1R 3AB



COMPETITION

£1,000-worth of sinclair software must be won



Now you stand a chance of winning software from the company that made your computer. Spot the hidden titles and you could receive a prize package for your Spectrum or ZX81

As the best-selling home computer company, Sinclair Research ensures that only top quality software bears its name

And this week Sinclair Research and Home Computing Weekly have got together to offer £1,000-worth of great Sinclair software as prizes for Spectrum and ZX81 owners

All you have to do is to find the software titles in the word square

First prize is £100-worth of software

Second prize software worth £50

And there are **34 more prize packages**, each of £25-worth of software

These prizes, selected for you by Sinclair Research, range from arcade games to education, utilities to strategy, languages to household

If you're a winner with **ZX81** these are some of the software packages you'll receive

Biorhythms
Chess
Flight Simulation
Thro' the Wall
City Patrol
Mothership
History
Music
Spelling
VU-Calc
Backgammon
Fantasy Games
Reversi
1K ZX Chess
Sabotage
Geography
Maths
Inventions
ZX FORTH
Toolkit

And if you've got a **Spectrum**, these are among the titles you could win, all from the latest Sinclair catalogue

Planet of Death
Glider
Inca Curse
VU-Calc
Flippit
Espionage Island
Reversi
Embassy Assault
Hungry Horace
Castle Spellerous
Ship of Doom
The Hobbit
Biorhythms
Planetoids
Cyrus-IS-Chess
Backgammon
Space Raiders

The rules

The closing date is first post on Friday March 30 1984 and the prizes will be allocated according to the How to enter section

Entries which do not follow the guidance given cannot be considered

Entries will not be accepted from employees of Argus Specialist Publications, Sinclair Research and Alabaster Passmore & Sons This restriction also applies to employees' families and agents of the companies

The editor's decision is final and no correspondence will be entered into

How to enter

Study the wordsquare carefully and try to find all the Sinclair Research software titles

All of them, plus more, are in the two lists from which most of the prizes will be drawn

Mark the titles you find by ringing them with a ballpoint pen or marking them with a semi-opaque felt top pen

Fill in the coupon carefully — if you are a winner it will be used as a label — and send the wordsquare with the coupon to us

You must mark on the back of the envelope the number of software titles you found

Please make sure that the coupon, wordsquare and envelope are correctly completed Your computer, Spectrum or ZX81, must be given, along with memory Entries which are incomplete cannot be considered

Do not enclose anything else

Post your entry to Sinclair Research Competition, Home Computing Weekly, No 1 Golden Square London W1R 3AB

Closing date is first post on Friday March 30

The sender of the first correct entry drawn will win the first prize of £1 000 worth of Sinclair software And the sender of the second correct entry will receive software worth £50

And the next 34 correct entries will win the senders £25-worth of software

The entries will be opened at random, regardless of computer named

The prizes will arrive from Sinclair Research within 28 days of the publication of the issue containing the names of the winners and the solution

Sinclair Research Competition

Entry Coupon

Name ______________________________

Address ______________________________

____

______________ **post code** ______________

Number of titles found ______________________

Computer owned (Spectrum or ZX81, with memory): ________

____

Complete clearly and fully — if you are a prizewinner this will act as a label Post to Sinclair Research Competition Home Computing Weekly No 1 Golden Square London W1R 3AB Closing date March 30 1984 Do not forget to follow carefully the guidance in the How to Enter section including writing the number of titles found on the back of your envelope

C	Y	R	U	S	—	I	S	—	C	H	E	S	S	R	O
A	X	E	X	T	O	C	E	W	H	E	J	N	I	P	O
P	L	A	N	E	T	O	F	O	E	A	T	H	O	M	O
M	C	S	V	B	R	W	C	V	S	K	H	L	A	B	N
X	S	I	N	C	A	C	U	R	S	E	J	P	Z	P	F
V	S	T	R	V	U	B	A	C	K	G	A	M	M	O	N
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O	Y	E	O	Y	C	B	F	G	O	B	H	I	G	Q	P
J	M	H	F	U	N	X	L	E	G	M	A	T	H	S	E
H	T	O	O	M	U	S	I	C	T	K	I	Y	O	H	L
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A	O	T	S	A	B	O	T	A	G	E	Z	R	M	I	G
U	E	Z	L	O	A	P	L	A	N	E	T	O	I	O	S
E	M	B	A	S	S	Y	A	S	S	A	U	L	T	J	L

Time for take-off again

More opportunities to journey among the stars. Our reviewers were there first and they present their briefings

Vortex 32K BBC £7.95

Software Invention, 50 Elborough St, London SW18 5DN

In this "3D voyage into unknown space" your task is to fly deep into the black void. How far you get is naturally dependent on you managing to miss colliding with oncoming asteroids and menacing enemy spacecraft.

The game allows either keyboard or joystick control and, as your velocity is determined by how close you are to the vortex (becoming faster, and faster and faster!), you simply control banking left or right. You are armed with laser torpedoes, which can destroy aliens, but remain inoperative during asteroid storms. Finally, if this all seems too easy, the alien laser blasts steadily wear down your shields leaving you open to destruction.

I found the three dimensional effects interesting, but it didn't seem to have the "feel" of some other 3D games, such as Star Raiders. Because hi-res graphics are used, the game is purely black and white which therefore loses it some impact. Well priced, but it cannot really be called "state of the art". I played similar offerings three years ago on an Apple II. **P.D.**

instructions	90%
playability	65%
graphics	65%
value for money	90%

★ ★ ★ ★

Here Comes the Sun 48K Spectrum £7.95

Alligata, 178 West St, Sheffield S1 4ET

The recipe for this space adventure is "a generous helping of Hobbit, a spoonful of Star Trek served with a garnish of Monty Python style humour." Quite a tasty dish!

Again, you are cast in the heroic mould. You have to enter the airlock of a space station to get to the controls, fire the retro rockets and pilot to safety. Fail and the station hits the sun and destroys the universe.

It takes about six minutes to load but the process is reliable. This gives you a chance to make a drink or to write down the vocabulary of 40 or so command words — you don't get a chance to see the instructions again once play starts.

For the most part the game is a nicely legible text but from time to time this is supported by location pictures. Commands are entered in two or three words. It pays to keep a careful note to avoid making the same mistake twice. I must own up to never looking like achieving success in the game. Good fun, nonetheless. **D.J.**

instructions	65%
playability	85%
graphics	60%
value for money	75%

★ ★ ★ ★

The Guardian 48K Spectrum £5.95

PSS, 452 Stoney Stanton Rd, Coventry

The display is a black screen with a centre square about half screen size, looking like a frosted web woven by a geometric spider. A demented scribble on square edge is, apparently, your spacefighter — at least it moves when you press. The promised Trackers, Antimines, Swirls and Snarks start centre web as small spots and, travelling towards the edge, expand into larger dots or crosses or purple v's.

Moving anti or clockwise round the edge, you fire your laser-cannon into quadrants or drop one of your two Star Smashers, obliterating anything inside the square. After a little of this, the screen clears, warns you to avoid meteors, lots of little dots travel centre to edge — end of game. Exciting, eh? Survival to the end with lives gives you two more Smashers and a game repeat. Two more scribbles up left indicate lives remaining and two block graphics up right show Star Smashers in hand.

Truly original graphics and the impossibility of positioning due to ultra-responsive keys make this a game to be remembered, so you can avoid it. **D.C.**

instructions	50%
playability	30%
graphics	10%
value for money	40%

★ ★

Laser Zone Dragon 32 £7.95

Salamander, 17 Norfolk Rd, Brighton BN1 3AA

This tape comes in Salamander's usual stylish packaging: a custom case, colourful inlay card and comprehensive, often amusing, instructions. The instructions informed me my opponents were fiercer than a Magra-Vampa with a sore nose. Gulp!

It is a loosely converted version of one of Jeff Minter's arcade classics for the Commodore computers. Yes, you do have to shoot the aliens but it's not quite as simple as that. You have two cannon which move along vertical and horizontal axes. Two types of creature attack, one makes for the horizontal axis while the other, which looks like a smiling face, goes for the vertical axis. If they manage to reach the axis they will patrol up and down the axis until they manage to destroy you — once they get this far, you are in trouble. The axis cannons are cleverly controlled by joystick and with the added help of electros which wipe out any creatures on your axes, the game sounds simple. That's where you are wrong. It's very difficult to do well.

Congratulations to Salamander on an exciting Dragon game nicely complemented with high score, title page, pause function and 15 selectable levels of play. **C.G.**

instructions	85%
playability	85%
graphics	65%
value for money	80%

★ ★ ★ ★

Insector VIC-20 £5.99

Romik, 272 Argyll Ave, Slough, Berks

For some time it has been clear that the VIC 20 is slowly sinking into the sunset. In spite of the thousands of VIC owners, software quality seems to be sinking too. This program, I am afraid, does nothing to allay my fears.

The scenario is depressingly familiar and is essentially of the Defender species. You control a spaceship equipped with the latest miracle weapon and attempt to defend humanoids from an unbelievable swarm of aliens with an even more unbelievable life cycle. Nothing new or original.

Technically the program is above average. The aspect ratio of the screen is tweaked to give a wider and shorter screen. Hi-res gives reasonable results. Use of sound is poor. Sixteen levels of difficulty are available but in reality higher levels were simply faster and I couldn't detect an increase in aggression.

If this had appeared in the first year of the VIC's life I would have considered it to be a cut above the rest. Considering the current state of the programming art, however, it struggles to be mediocre. In view of the high quality software from Romik for the 64, this is even more disappointing. **A.W.**

instructions	70%
playability	60%
graphics	40%
value for money	65%

★ ★

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Read at speed... and spot the stars

Two educational games by HCW regular Vince Apps. They're taken from his book, 40 Educational Games for the Commodore 64, to be published next week by Granada

Speed Reading

This is a game for young show-offs who can remember everything, write it down and get it right every time

A sentence will appear on the screen for a few seconds and you must remember the sentence and the correct spelling of the words if you are going to get your points

There is one big snag for clever little people, though The better your answers the faster the computer goes and you will only get to see the sentence for a split second before you have to answer

The computer will put the line up on the screen and, after a short pause, ask you to type it in Remember to press return afterwards

For different sentences, change the lines from 400 onwards

Constellations

Challenge your friends by asking them at night if they know which star group is which

The computer will show the shape of some of the main constellations and will give the Latin and the common names for each of them

Then the screen will display the stars without names and ask you to type in the answer in capitals and press return

If your gues is wrong the screen will light up and show the names

The star at the end of the tail of Ursa Minor, or the little bear, is the pole star and will always be to the north

● 40 Educational Games for the Commodore 64 costs £5 95 and covers a range of subjects, including maths geography, grammar, weights and measure and music. Nearly all have a games element to encourage the user to beat the computer

```
10 REM ********************
20 REM *                  *
22 REM * SPEED READING    *
24 REM *                  *
25 REM ********************
27 GOSUB10000
30 AT$=CHR$(17) FORT=1TO6 AT$=AT$+AT$ NE
XTT AT$=CHR$(19)+AT$
32 POKE53281,5 POKE53280,13
40 SC=0
50 TM=300
60 NS=0
70 DIMW$(30)
80 FORJ=1TO30
90 READW$(J)
100 NEXTJ
110 FORN=1TO2
120 R=INT(RND(1)*30)+1
130 PRINTCHR$(147),CHR$(31);
132 FORT=0TO39 PRINTCHR$(10),CHR$(32), N
EXTT PRINT
135 PRINTLEFT$(AT$,2)CHR$(31);CHR$(18)"
    S P E E D   R E A D I N G         ",
137 FORT=0TO40 PRINTCHR$(10),CHR$(32), N
EXTT PRINTCHR$(144)
140 PRINTLEFT$(AT$,4)SPC(4)"SCORE  "SC
150 PRINTLEFT$(AT$,4)SPC(20)"HIGH SCORE
 "NS
155 POKESO+1,60 POKESO+4,19 FORDL=1TO30
NEXTDL POKESO+4,10 POKESO+1,0
156 PRINTCHR$(149)
157 PRINTLEFT$(AT$,7)SPC(5)CHR$(18), FOR
T=1TOLEN(W$(R)) PRINT" ". NEXTT PRINT
160 PRINTLEFT$(AT$,8)SPC(5)CHR$(10),W$(R
)
162 PRINTLEFT$(AT$,9)SPC(5)CHR$(18), FOR
T=1TOLEN(W$(R)) PRINT" "; NEXTT PRINT
```

```
170 FORDL=1TO(TM-SC) NEXTDL
175 POKESO+1,60 POKESO+4,19 FORDL=1TO30
NEXTDL POKESO+4,10 POKESO+1,0
177 FORT=0TO2
180 PRINTLEFT$(AT$,7+T)SPC(5)"
                                      "
182 NEXTT
190 PRINTLEFT$(AT$,16)SPC(5)CHR$(5);"WHA
T WAS THE SENTENCE?",CHR$(144)
195 PRINTLEFT$(AT$,10)SPC(5),
200 INPUTA$ A$=" "+A$+" "
202 IFLEN(A$)<32THENA$=A$+" " GOTO202
210 IFLEFT$(A$,LEN(W$(R)))=W$(R)THENGOTO
270
220 POKESO+1,23 POKESO+4,17 FORDL=1TO30
NEXTDL POKESO+4,16
230 PRINTLEFT$(AT$,6)SPC(5)CHR$(5);"THE
SENTENCE WAS ";CHR$(144)
240 PRINTLEFT$(AT$,8)SPC(4)W$(R)
244 PRINTLEFT$(AT$,16)SPC(3)"
                                      "
246 PRINTLEFT$(AT$,10)SPC(3)"
                                      "
250 FORDL=1TO1000 NEXTDL
260 GOTO300
270 POKESO+1,14 POKESO+4,33 FORDL=1TO30
NEXTDL POKESO+4,32
280 SC=SC+10
290 NEXTN
300 NEXTN
310 IFSC>HSTHENHS=SC
312 PRINTCHR$(147)
314 PRINTLEFT$(AT$,0)SPC(7)"YOUR FINAL S
CORE WAS ",SC
316 IFSC=HSTHENPRINTLEFT$(AT$,10)SPC(3)"
```

```
THIS IS THE HIGHEST SCORE TODAY."
310 PRINTLEFT$(AT$,12)SPC(6),CHR$(18);"
HIT ANY KEY TO PLAY AGAIN "
320 WAIT197,64
330 GETQ$ IFQ$=""THEN330
340 SC=0
```

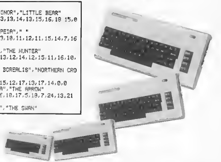
```
350 TM=220
360 GOTO110
370
380 END
390
400 DATA" FOUR GFEEN TURTLES "
410 DATA" LONG GPEEN PENCIL "
420 DATA" THE WHEEL IS ROUND "
430 DATA" THE BOOK IS NOT HEAVY "
440 DATA" THE LEAF IS GREEN "
450 DATA" LOOK AT THE TREE "
460 DATA" FICK UP THE RABBIT "
470 DATA" EXTEND THE LADDER "
480 DATA" THE KITTEN IS UP A TPEE "
490 DATA" WE WAITED A LONG TIME "
500 DATA" WE DASHED THROUGH THE GATE "
510 DATA" THE UMBRELLA IS OPEN "
520 DATA" THE UMBPELLA IS CLOSED "
530 DATA" THE BOOK IS TOO HEAVY "
540 DATA" THE SHOP IS CLOSED "
550 DATA" OFEN THE CUPBOARD "
560 DATA" RAPID READING RESEARCH "
570 DATA" ELEPHANTS ARE LARGE MAMMALS "
580 DATA" THE GRASS IS VERY GREEN "
590 DATA" THE RIVER IS FAST AND DEEP "
600 DATA" GREY COMPUTER PERIPHERAL "
610 DATA" COMPLETLY CORRECTED "
620 DATA" RESEARCH AND DEVELOPMENT "
630 DATA" UNTANGLE THE KNOT "
640 DATA" FIERY RED FIRE ENGINE "
650 DATA" CROSS EXAMINE THE WITNESS "
660 DATA" HOLD UP THE MIRROR "
670 DATA" A LONG RUN OF LUCK "
680 DATA" THE SPANIARD OWNS A DOG "
690 DATA" SMALL PIECES OF BUTTER "
```

```
10000 REM SET UP SOUNDS
10010 SO=54272
10020 FORT=0TO28 POKESO+T,0 NEXT
10030 POKESO+1,20 REM  PITCH
10040 POKESO+5,9  REM  ATTACK/DECAY
10050 POKESO+6,240 REM SUSTAIN/RELEASE
10060 POKESO+24,15 REM VOLUME
10070 POKESO+4,16  REM WAVEFORM
10080 RETUPN
```

```
10 REM *******************
20 REM *                 *
22 REM *  CONSTELLATIONS *
24 REM *                 *
25 REM *******************
30 AT$=CHR$(17) FORT=1TO6 AT$=AT$+AT$ NE
XTT AT$=CHR$(19)+AT$
35 POKE53280,0 POKE53281,0 PRINTCHR$(147
);CHR$(150)
40 T=0
50 FOR CN=1TO7
60 READ X,Y
70 CN(CN,T,0)=X
80 CN(CN,T,1)=Y
90 IFX=0THENGOTO110
100 T=T+1 GOTO60
110 READCH$(CN,0)
120 READCH$(CN,1)
130 T=0 HEXTCN
135 FORN=1TO7
137 FL=0 R=N GOTO150
140 R=INT(RND(1)*7)+1
150 IFCH(R,T,0)=0THEN190
160 PRINTLEFT$(AT$,CN(R,T,1))SPC(CN(R,T,
0)+3)"."
170 T=T+1
180 GOTO150
190 IFFL=1THENGOTO250
195 PRINTLEFT$(AT$,4)SPC(12),"
    "
200 PRINTLEFT$(AT$,4)SPC(12),CN$(R,0)
205 PRINTLEFT$(AT$,20)SPC(12),"
     "
210 PRIHTLEFT$(AT$,20)SPC(12),CN$(R,1)
```

```
220 FORDL=1TO1000 NEXTDL
230 IFFL=0THENPRINTCHR$(147):T=0 NEXTN F
L=1 GOTO310
250 PRINTLEFT$(AT$,20)SPC(8),"WHICH IS T
HIS ?"
260 PRINTLEFT$(AT$,22)SPC(8),"INPUTAN$
264 PRINTLEFT$(AT$,20)SPC(8),"
     "
266 PRINTLEFT$(AT$,22)SPC(8),"
           "
270 IFAN$=CN$(R,0)ORAN$=CN$(R,1)THENPRIH
TLEFT$(AT$,22)SPC(10)"THAT IS CORRECT!"
280 PRINTLEFT$(AT$,4)SPC(12),CN$(R,0)
290 PRINTLEFT$(AT$,20)SPC(12),CN$(R,1)
300 FORDL=1TO1000 NEXTDL
310 T=0 PRINTCHR$(147) GOTO140
1000 DATA 12,11,15,10,17,10,20,10,22,11,
25,9,24,7,0,0
1010 DATA"URSA MAJOR","GREAT BEAR"
1020 DATA12,11,14,11,12,9,14,9,15,7,17,6
,20,5,0,0
```

```
1030 DATA"URSA MINOR","LITTLE BEAR"
1040 DATA12,11,13,13,14,13,15,16,18 15,0
,0
1050 DATA"CASSIOPEIA"," "
1060 DATA12,11,13,10,11,12,11,15,14,7,16
,15,10,7,0,0
1070 DATA"ORION","THE HUNTER"
1080 DATA 12,11,13,12,14,12,15,11,16,10,
15,10,0,0
1090 DATA"CORONA BOREALIS","NORTHERN CRO
WN"
1100 DATA 12,11,15,12,17,13,17,14,0,0
1110 DATA"SAGITTA","THE ARROW"
1120 DATA12,11,16,10,17,5,18,7,24,13.21
10,21,9,22,5,0,0
1130 DATA"CYGNUS","THE SWAN"
```



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Will you get out of these?

Treasure hunter, schoolboy, spy... some of the roles our reviewers took to bring you these reports of their experiences

Pyramid CBM 64 £6.95

Mogul, 90 Regent St London W1R 5PT

This game, claimed to have an average playing time of 50-70 hours and to be one of the toughest adventures offered by Mogul, is quite hard in places.

The instructions are not much use, they simply give you help on how to enter commands. Only first and last words are used, others are ignored.

The screen layout is a mess. The program does not even clear the screen when it starts. This kind of laziness by a programmer is totally unjustified.

Your task is to get into the pyramid and collect the treasures. There are various difficulties to hinder you, such as finding entrances and exits.

A quick look at the BASIC listing showed me there are about 20 commands and roughly 40 locations.

Thinking back to a Scott Adams game on this theme I was surprised to find that in at least two years we are still faced with programs that are not much improved, if any. Perhaps the biggest step forward has been made by games such as The Hobbit. I cannot say I was impressed with Pyramid although I might have been at a lower price. **K I**

instructions	10%
ease of use	40%
display	0%
value for money	40%

★ ★

Bugged Dragon 32 £6.95

Dungeon, Milton House St John St, Ashbourne, Derbys DE6 1GH

Dungeon describes this as a tactical arcade game and indeed some thought is needed to obtain a decent score. You control your man with the cursor keys and must destroy the bugs that chase you. You do this by pushing eggs at them: if an egg hits them they disappear. As you clear screen after screen, the game gets more difficult. There are less eggs to use and there are added hazards: nests and mutant bugs.

It must be the best supported arcade game available for the Dragon. The title page, instructions, high score table, scoring system and use of sound are all excellent, particularly when you consider that the game is in BASIC. Dragon text and high resolution graphics are united on the same screen using another original technique. This is an example of the best BASIC programming you are likely to see on a Dragon. But even all the frills do not make up for what is a monotonous, lacklustre game. Movement is clumsy, keyboard response atrocious and the bugs and your man not very convincing. Good programming, but a poor game. A pity. **C C**

instructions	85%
playability	15%
graphics	40%
value for money	30%

★ ★

'O'-Level Caper VIC-20 £9.99

Phoenix, 118 Marsh Rd, Pinner, Middx

A twin tape package — arcade game and adventure — in which you are cast as a 16 year old trying to recover exam papers.

The Krazy Kong-type arcade game has two phases. The first, which has to be completed eight times at different skill levels, involves reaching the top of the screen, collecting books and avoiding hazards from the teacher. Since I never reached the second phase I cannot comment on its content and you need the clues at the end of each to help solve the adventure.

Were I honest, truthful and decent the review would end here since I couldn't get past the first screen. Without the clues or codes, we used cunning to break into the adventure.

Both arcade and adventure were unexceptional. The quality of the arcade tape was fair but lacked interest and the adventure was a little promising.

While I can see the advantage of marketing both in the same package, it seems a fatal mistake to make them interdependent. If you are weak at one you may never even start the other. Needs 16K expansion. **M.W**

instructions	80%
playability	30%
graphics	45%
value for money	55%

★ ★ ★

Super Spy Dragon 32 £6.50

Richard Shepherd Software, 23 25 Elmshott La, Cippenham, Slough Berks

With strong overtones of James Bond, Super Spy puts you in the position of having to save the world again, but this time from the sinister Dr Death. There are four parts: find Dr Death's island, find the entrance to his underground maze, search to find the control room where the missile is and then to disarm it.

My interest grew — it sounded like a good adventure that would really test adventuring and logic skills and with part three being a graphically represented maze to get through, my powers of reaction would be strongly tested too.

I was wrong. The adventure is very easy. Within 20 minutes I had found the island and the entrance to the maze. The maze was simple but reasonably effective and, after two attempts I broke through. I saved the game at this stage and, on returning after lunch, spent less than 15 minutes cracking the final part of the adventure. In under 90 minutes I had finished the adventure and I cannot see it taking most people any longer. **C G**

instructions	60%
playability	30%
graphics	20%
value for money	25%

★

Mania TI-99/4A £5.95

Intrigue, Cranbrook Rd, Tenterden, Kent TN30 6UJ

A graphics and text adventure in which you escape the strange lands of Mania, in order to find the legend of the Ultimate Quest.

At the beginning of each move the screen displays your score, wealth, IQ and strength together with a graphic representation of your position and surrounding objects.

Although the graphics use the TI's facilities well, they don't equal the quality of those used in The Hobbit or Valhalla.

The pictures of your surroundings are rather small — about an eighth of a screen — but they are accurate, portraying 3D very well in those pictures where it is used. Some backgrounds are used more than once, but the foreground objects are usually different.

There are 17 commands. The command "say" enables you to ask a question to the characters which you meet on your travels. These include wizards, Manians and serpents.

When you come across a nasty creature you can choose to fight it with any of the weapons that you have acquired along the way. I would certainly recommend Mania. **J J**

instructions	75%
playability	87%
graphics	85%
value for money	90%

★ ★ ★ ★ ★

Romance among the ROMS in TV's Silicon Valley

Watch out Dallas, here comes Midas Valley Warner Brothers is planning a two hour television pilot film which is modelled on other prime time soap operas such as Dynasty The initial plot will deal with intrigue and industrial spying in the Silicon Valley If the pilot show is well-received, there are plans to turn it into a serial as soon as this autumn. Ah, I can see it now romance among the ROMs, naked nerds, and profligate programmers I can hardly wait (to pass it by)

★ ★ ★ ★

IBM has recently announced that it will shortly be joining the ranks of computer manufacturers who are glad to donate hardware and related items to deserving schools According to IBM, the firm is planning to give away 2,000 PCs and PCjrs to schools in 26 cities The total value of the products to be donated is roughly $12 million and is expected to serve about 300,000 students in public and private schools Although the details were not announced, the firm will also be making some sort of training available to these same schools, also at no charge

★ ★ ★ ★

Well, it finally happened Mattel has dropped its Intellivision video games players Many of us in the industry expected this, especially after Mattel's move last year in which it unloaded its rights to the Aquarius home computer and in light of the industry trend which witnesses video game sales decreasing in favour of similar products which run on home computers The plans are now to sell the Intellivision to Terrence Valeski — currently Mattel's senior vice-president in charge of sales and marketing — and a group of associated private investors

★ ★ ★ ★

Here's a novel computer application coming from, of all places, Oahu, Hawaii In the hope of reducing the incredible traffic jams that occur with such frequency, state officials are looking into the possibility of installing about 300,000 free computer terminals in homes and businesses These would then be connected to a computer network designed to co-ordinate taxis, buses, car pools, and so forth The feasibility study was conducted by the Hawaii Department of Transportation and resulted in the conclusion that a door-to-door ride sharing system using computers is economically and technically possible and highly beneficial According to the study, it will cost about $201 million to install the needed 335,000 computers in 1985

When it comes right down to it, which it undoubtedly will, it could just be that there is no desire, in capitalistic and individualistic America, for a widespread standard — be it for home computers or anything else Certainly the home computer market over here is far from stable and until it is many manufacturers of hardware and software may see absolutely no advantage in subscribing to a standard This is especially true if the success or failure of the hardware depends on the availability of the software which in turn depends on the availability of the hardware

That may be a very vicious circle indeed I'll keep you posted

★ ★ ★ ★

This item seems relevant especially since the year is 1984 It is expected that within the next few months at least two states will enact laws that deal with computer operators who knowingly break into computer systems and/or encourage others to do so by providing unauthorized passwords

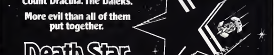
In California and Wisconsin there are already computer-crime laws on the books which make such illegal access to programs and data a felony, but both states are anticipating strengthening those laws so that even those who access such systems for "fun" or "curiousity" can be penalized Neither of the laws in either state propose to penalize computer bulletin boards on whose services such passwords are often found posted by unknown hackers, but if the person originally posting the password is found, it is likely that prosecution would follow In neither case is the intent to put people in jail (both current and proposed laws carry stiff fines as the main penalties), but the record of persons convicted of such endeavors would reflect a felony conviction

The basic intent of the laws is to prevent the sort of occurrences that the phone companies underwent several years ago with people having the famous blue boxes which allowed the user to make free and unlimited long distance calls The systems are afraid that without adequate legal protection the data and programs could be left open to industrial espionage and other unsavoury situations

This writer, for one, is not sure if such laws will do anything other than make such people a bit more careful It seems a rather naive approach towards keeping the honest people honest, but I guess a majority of laws are probably designed to try to do just that

Guess what? Out of space again See you next week.

Bud Izen
Fairfield, California


Attila the Hun. Ivan the Terrible.
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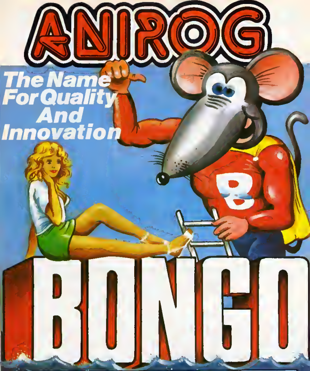
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How will these help you?

The latest utilities for the Dragon 32 and BBC/Electron are put through their paces by our experts

Disassembler Dragon 32 £5

Hilton Computer Services, 14 Avalon Rd, Orpington, Kent BR6 9AX

Hilton is well known for its serious software, particularly banking systems, so I was interested to see how successful it had been when turning to machine code programming and manipulation. Disassembler comes in the most basic of packaging: a computer printed inlay card and a standard cassette case. And basic instructions are given. I suppose Hilton considers anyone purchasing a disassembler does not need to be told which column is Hex, which is mnemonics and so on.

Once loaded it lies in memory while you write BASIC programs, load machine code programs or do anything with your Dragon. On typing EXEC &H7725 the computer starts the disassembler.

It offers a pretty basic range of options. You can direct the disassembled program to either printer or screen display. Once you give it the required starting address, it displays a screenful of code in the standard way. The program is, then, perfectly adequate and suitable for anyone using machine code.

The price is reasonable but it may still be better to buy assembler/disassembler/editor all in one.

C.G.

instructions	30%
ease of use	50%
display	60%
value for money	65%

★ ★ ★

BASIC Environment 32K BBC £14.50

Harris McCutcheon Systems, 40 Huntingdon St, London N1

This set of utility programs supplied only on 40-track disc is aimed at the more experienced BASIC programmer. They include a main linking utility and code compressor with smaller programs to provide such facilities as data entry and validation, coin entry and checking, a get key routine, screen handler and a disc sector editor.

All are accessible and may, where necessary, be altered. Most may be incorporated into other programs as PROCedures and called as normal. Joining these PROCedures into another program is dealt with by the link routine which expects to find the various parts of the new program saved under different names on one disc with line numbers of the sections already in the correct order.

The instruction booklet is written in what may best be described as an "individual" style and is not easy to follow.

While all the elements work satisfactorily, I found the whole thing difficult and cumbersome to work with. Perhaps it comes with practice?

J.G.W.

instructions	20%
ease of use	25%
display	n/a
value for money	40%

★ ★

Graphics System BBC Electron £19.95

Salamander, 17 Norfolk Rd, Brighton BN1 3AA

A superb package with a very detailed manual. All controls are via the keyboard and there are 20 commands. This seems daunting at first but, like anything used regularly, you soon learn. They do follow a logical pattern, e.g. A = Arc, B = Box.

When loading is complete a sound prompts you to turn off the recorder and select screen mode. Following on from the main program there are various beautifully drawn demonstration pictures to inspire you to greater things!

The possibilities are limitless. There are so many features to help in creating your masterpieces that there can be no excuses for poor graphics in future. There is, for example, a grid of dots which can be switched on or off to aid accuracy.

The marvellous part about it is the "text window" which allows you to monitor your progress. Information included is the colour menu for the chosen mode, present function prompt, draw mode and x,y coordinate angles. It works like an electronic palette, serving as a constant reminder.

With this program a wonderful canvas is created to play with or work on.

M.P.

instructions	100%
ease of use	80%
display	100%
value for money	95%

★ ★ ★ ★ ★

Tele-Forth Dragon 32 £19.95

Microdeal, 41 Truro Rd, St Austell, Cornwall PL25 5JE

The latest of several Dragon Forth packages, the cassette comes with an A4-sized loose leaf manual containing full details of the program and a short Forth tutorial: this should give beginners a fair idea of how the language works, but you would have to invest in a book to write substantial programs. And books on Forth seem to be more expensive than books on BASIC.

A version of FIG Forth is used with about 20 new words added, to deal with manipulation of double (32 bit) numbers, printer support, insertion of machine code subroutines etc.

I tested two copies on two different Dragons, and had immense difficulty in getting it to work. On my own, normally well-behaved, Dragon every attempt to define a new word produced an error message; on the other machine I tried, word definitions and other commands were accepted only intermittently and the program crashed regularly. I did not succeed in getting more than half way through the training section of the manual on either. However, Microdeal does offer advice and help to any users who have problems with the program.

M.N.

instructions	70%
ease of use	10%
display	30%
value for money	35%

★ ★

Supadraw Dragon 32 £7.95

Steeplesoft Systems, 58 Deepfield Way, Coulsdon, Surrey

There is a considerable range of graphics programs now available for the Dragon, so any new ones need to have some pretty special facilities — or small price tags — to make any impression.

This is a competent program, which allows you to draw pictures in any of the Dragon's hi-res modes with keys or a joystick, to draw circles, ellipses and rectangles, to add text of various sizes — in PMODE4 only — and to save your completed masterpiece on tape or on a video recorder. I couldn't test the video option, as I don't have the necessary equipment, but the rest all worked well. It is also possible to call up a grid pattern to assist you in designing a picture; this can be removed when the picture is complete.

An A4-sized manual clearly describes all the facilities. The program is very user-friendly, and my seven year-old daughter enjoyed playing with it.

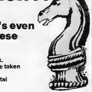
If you don't yet have a graphics program then this is worth considering, but it really doesn't have enough extra facilities to justify buying if you've already got something similar.

M.N.

instructions	85%
ease of use	80%
display	80%
value for money	70%

★ ★ ★

It was the best then . .



Chess-players with a 48K Spectrum will find this program ideal if they are stuck for a partner

I have seen other chess games for computers, but as far as I am concerned, this is the best so far, and should give hours of enjoyment to the chess buff **B B**

instructions	95%
playability	100%
graphics	75%
value for money	100%

★ ★ ★ ★ ★

Ten levels of play ♦ graphic display of board ♦ [illegible] change set level in midgame ♦ board can be set in any position ♦ history of moves ♦ copy display & history to printer at any time ♦ can save game at any point ♦ displays your moves and computer's

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All instructions come up on screen as well as your scoring possibilities and final tally.

Score from 50 for an early hit to 10 for 'nearly missed'.

How it works

1-20 initialise program
30 data input
40 game instructions display and score display
50 define enemy ship patterns
60 define battlefield
70-470 main game loop

Variables

COL and **LIN** used in PLOT statements for positioning sight
S$ holds characters of the enemy ships
A$ RND statement to decide which ship crosses horizon
MI number of missiles left
HS high score
SC present score
Q$ numbers for a little tune played at times during game

```
   1 REM MISSILE ATTACK
   2 REM BY M.R.DRAPER
   3 REM FOR THE ORIC-1
  10 DIMS$(100)
  20 POKE 618,10
  30 GOSUB9000
  40 GOSUB4000:INK7
  50 GOSUB1000
  60 GOSUB1170
  70 HS=0
 100 FORX=1TO100:J=0:AA$=S$(INT(RND(1)*3+1))
 110 FORXI=1TO32:WAIT5
 120 PLOT0,5," "
 130 PLOTXI,5,AA$
 140 PLOTCOL,LIN," "
 150 K$="A":K$=KEY$
 160 IFCOL<=4THENCOL=4
 170 IFK$<>"Z"THEN190
 180 COL=COL-2
 190 IFCOL>=36THENCOL=36
 200 IFK$<>"X"THEN220
 210 COL=COL+2
 220 PLOTCOL,LIN,"+"
 230 PLOTCOL,4," "
 240 IFK$<>"L"THEN310
 250 L=0:Y=20
 260 MI=MI-1
 270 PLOTCOL-1,5,"g"
 280 PLOTCOL+1,5,"h"
 290 SHOOT:EXPLODE:GOSUB6000
 300 IFJ=1THEN340
 310 WAIT5
 320 IFMI=<0THEN3000
 330 NEXTXI
 340 NEXTX
 350 GOTO1000
 360 REM TUNE
 370 Q$="14617356173561735"
 380 FORQ=1TOLEN(Q$)
 390 W=ASC(MID$(Q$,Q,1))-47
 400 PLAY 7,0,5,2500
 410 MUSIC1,1,W,10
 420 MUSIC2,2,W,10
 430 MUSIC3,3,W,10
 440 WAIT 15
 450 NEXT Q
 460 PLAY 0,0,0,0
 470 RETURN
1000 PAPER4:CLS:LIN=22:COL=15:MI=10:PRINT
1010 FORX=1TO5:PRINTCHR$(27);CHR$(80):NEXTX
1020 GOSUB6070
1030 RETURN
1170 S$(1)="a                    "
1180 S$(2)="bc                   "
1190 S$(3)="def                  "
1200 FORX=4TO6
1210 S$(X)="                     "
```

```
1220 NEXTX
1230 SC=0
1240 RETURN
3000 SC$=STR$(SC):PLOT6,10,"YOUR SCORE WAS "
3010 PLOT20,10,SC$:WAIT150
3020 SC=0:MI=10
3030 PLOT3,16,"PRESS ANY KEY TO PLAY"
3040 GOSUB360:GETA$
3050 GOSUB1000
3060 GOSUB1170
3070 GOTO100
4000 CLS:PAPER1:INK0
4001 PRINT:PRINT:PRINT:PRINT,,;
4002 POKE#26A,10:PRINT"J  MISSILE ATTACK"
4003 PRINTCHR$(4);PRINT:PRINT:PRINT
4004 PRINT" THE OBJECT OF THIS GAME IS TO":PRINT:PRINT
4005 PRINT" SINK THE SHIPS WITH YOUR MISSILES":PRINT:PR
INT
4006 PRINT" AS THEY CROSS THE HORIZON":GOSUB360:CLS:PRI
NT
4007 PRINT"* * * * * * * * * * * * * * * * * * * *"
4008 PRINT:PRINT,,;"THE CONTROLS "
4009 PRINT:PRINT
4010 PRINT,,"Z--MOVE LEFT":PRINT
4011 PRINT,,"X--MOVE RIGHT":PRINT
4012 PRINT,,"L--TO FIRE":PRINT
4013 PRINT:PRINT"* * * * * * * * * * * * * * * * * * * * *"
4014 PRINT:PRINT,,;"SCORING"
4015 PRINT:PRINT
4016 PRINT,,"def    SCORES 10":PRINT
4017 PRINT,,"bc     SCORES 25":PRINT
4018 PRINT,,"a      SCORES 50":PRINT
4019 PRINT:PRINT"PRESS ANY KEY TO PLAY THE GAME"
4020 GOSUB360:RETURN
4050 GET A$
6000 REM
6010 IFSCRN(COL,5)=97THENSC=SC+50:J=1
6020 IFSCRN(COL,5)=98ORSCRN(COL,5)=99THENSC=SC+25:J=1
6030 IFSCRN(COL,5)=100ORSCRN(COL,5)=101ORSCRN(COL,5)=10
2THEN6050
6040 GOTO6060
6050 SC=SC+10:J=1
6060 IFSC>HSTHENHS=SC
6070 PLOT3,0,"SCORE:      MISS:      HIGH SCORE:"
6080 SC$=STR$(SC)
6090 PLOT9,0,SC$
6100 MI$=STR$(MI):PLOT20,0,MI$
6110 HS$=STR$(HS):PLOT35,0,HS$
6120 RETURN
9000 RESTORE:FORU=46856TO46919
9010 READS
9020 POKEU,S
9030 NEXTU
9040 DATA0,0,0,0,0,0,16,255
9050 DATA0,0,0,0,1,39,255,127
9060 DATA0,0,0,0,128,230,255,254
9070 DATA0,0,0,0,1,255,127,63
9080 DATA0,24,60,63,255,255,255,255
9090 DATA0,0,0,0,192,255,254,252
9100 DATA8,4,2,63,2,4,8,16
9110 DATA16,32,64,63,64,32,16,0
9120 RETURN
```

Games to think about

A selection of games for the BBC micro which all require some thought instead of zapping

Star Trader
32K £7.95

FBC Systems Ltd, 10, Main Centre, Derby

Perhaps you consider that the galaxy is too full of acts of violence? If so, then this game offers you the unusual task of both taming and trading with the aliens of many worlds.

You fly around the planets of various systems, trading minerals, gems, food, fuel and water. Your aim is to get sufficient wealth to trade with the mega beings who will allow you to take their super-computer back to Sol.

Screen display is split into five teletext windows which display maps, status information and question prompts. The game presents itself as one of planned strategy and juggled resources! It is therefore essentially the status information which allows you to ensure you have enough life-support materials and trade goods.

Games similar to Star Trader appeared three - four years ago as text-only on computers without proper graphics. This game is an acceptable idea, but fails to exploit the graphic potential of the BBC. **P.D**

instructions	90%
playability	70%
graphics	50%
value for money	75%

★ ★ ★ ★

Wizard's Challenge
32K £7.95

Program Power, 8/8a Regent St, Chapel Allerton, Leeds LS7 4PE

Another, text only adventure for the ever growing number of fans of this particular software art to descent upon! Set in a school playing field, it involves searching for 12 treasures desired by the evil wizard.

It is attractively set out, although the split screen effect is not used particularly well — the room description can be scrolled off the screen when it might be needed again. Range of movement is good: combinations of the usual four compass directions as well as up and down. You are advised to make a map as I did, fairly successfully.

I haven't yet found all the treasures but even in the short time I have had to play, I did find some of them and this has given me the desire to play again, unlike some adventures which are so difficult even in the initial stages, that I'm completely put off. This should suit a modestly experienced adventurer who had had good experience of schools and knows how some of the usual adventure conventions work. The storyline is only fair: the old treasure quest in a new setting. **D.C**

instructions	65%
playability	70%
graphics	30%
value for money	60%

★ ★ ★

Intergalactic Trader
32K £8.95

Program Power, 8/8a Regent St, Chapel Allerton, Leeds LS7 4PE

This has one feature that needs to be emphasised — it is for more than one player and cannot really be used alone. If my child was using a computer for long periods (as I do now!) I would prefer him/her to be using a program like this than to be at the keyboard alone simply for the interaction with a human rather than a machine opponent.

This game can accommodate up to nine players and is really a rather souped-up board game. The purpose is to become rich by mining, transporting and trading rare ores from one planet to another. There are plenty of changing situations to try to take care of and profit from. What part of the program depends on luck and what on skill is hard to determine, but it is fun. The only criticism I would make is that the screens could have been more colourful and better presented (all Mode 7) and that some graphics would have been nice. But what can you expect from a game which can hold the actions of nine players in its memory? **D C**

instructions	95%
playability	80%
graphics	30%
value for money	90%

★ ★ ★ ★

Scan
£7.50

Paen Systems, Quebec Marketing, Little Bealings, Woodbridge, Suffolk

This might not look very promising, but to my mind it's one of the most testing games of logic I've seen on a micro. Two 5x5 grids represent the computer's 25 playing cards face down and the player's corresponding 25 slots. You have to guess the value of any card lying face down by placing one of your own cards on top of it. If your card is higher than or equal to the micro's card you win. If you can complete a horizontal or vertical row of five correct you win a trick.

This would be guesswork if it weren't for the information displayed against each row and column. Counting each at normal face value, the total of each row and column are displayed above and to the right of the grid. Left and below are the numbers of cards of each suit. So a clever logician can make intelligent guesses about likely positions.

It has been designed to make use extremely easy. The display is too crowded, but it is difficult to see how else it could have been done. The instructions are misspelt a rather hard on the eye. I think this game is likely to give much longer use than the average arcade game. **N W**

instructions	80%
ease of use	90%
display	85%
value for money	95%

★ ★ ★ ★

Sliding Black Puzzle
32K £9.95

Ega Beva, Central Trading Estate, 275-277 Bath Rd, Bristol

Jigsaw puzzles I love but sliding block puzzles I find infuriatingly difficult, so I would not judge this game suitable for anyone younger than 11, at least not without practice. Certainly most adults will find enough entertainment at the higher levels, although I am not fully convinced that the lower levels are much easier.

The tape is very attractively packaged, the instructions clear. There is a choice of four excellent, colourful pictures and five levels of difficulty, each picture taking seven minutes to build before being sectioned into a number of blocks which then scatter. By using the cursor keys, you have to arrange them into their correct order, and an appropriate tune is played on completion of each correct picture.

This suite of programs should improve the spatial ability of any young person, and the information given at the end of each completed picture, time taken and number of moves, enables it to be used as a competitive game.

A good educational game, but annoyingly the level of difficulty can be altered only by reloading the picture. **J H D**

instructions	80%
playability	70%
graphics	90%
value for money	75%

★ ★ ★

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How to make Dragon programs run on your Spectrum

Just type in R.A. Houlton's program and it will show you how to convert the Dragon's most-used commands to work on the Spectrum. And it does the job while you're typing...

Have you even read through a program written for a computer other than the Spectrum and thought "I could handle the BASIC but what about the PRINT and graphics commands?"

This utility program will allow you to deal with the PRINT @, CHR$ and SET commands found in Dragon programs while actually typing the program into your Spectrum Using the line numbering shown in the listing, the program can be loaded and you can then call on it when you come across the Dragon commands by entering GOTO 9910 (without a line number)

How it works
9910-9911 set up menu
9912-9916 execute menu choice
9917-9919 set up PRINT@screen
9920-9922 error messages
9923-9926 input routine
9927 calculates x co ordinate
9928 calculates y co ordinate
9929 output to screen
9932-9936 set up CHR$ screen
9939-9940 error and warning messages
9941-9948 extract colour code
9949-9964 allocate Spectrum CHR$
9965 output to screen
9967-9974 set up PLOT instructions
9975-9986 set up SET input screen and error messages
9987-9995 determine colour
9996 calculates x and y co-ordinates
9997 output to screen
9995 returns to program being typed

The program is a menu driven offering the three Dragon options, together with a fourth exit option which takes you back to the program you are entering When using the program a warning is given when the screen is full and entering 1000 will clear the screen, entering 2000 will take you back to the menu Variable limits are displayed at each input point Incorrect values will either take you back to re-enter the variable or display a NOT VALID message

Unlike the Spectrum print space which is 8 pixels high by 8 wide, the Dragon print space is 11 pixels high by 8 pixels wide This means that the Dragon only prints 16 lines per screen compared with the Spectrum's 22 For programs not using graphics this will cause no inconvenience For programs using the low resolution graphics CHR$, the effect will be to slightly compress the graphics in the vertical dimension

The Dragon CHR$ variable produces block graphics similar to these found on the Spectrum keys 1 to 8 together with their inverses but not in the same order Also, the variable contains a colour code for the INK colour The program displays the Spectrum CHR$ number, the actual character and its colour name Very often Dragon CHR$s will be combined in matrix form, so look for clues such as FOR I = 1 TO 4, FOR J = 1 TO 3 which would imply a 4 x 3 grouping of the characters to build a composite figure

The Dragon SET instruction is by far the most difficult to achieve The instruction SET a, b, c, produces a graphics block approximately one quarter of the size of a PRINT space at a specified location on the screen with a particular ink colour

Variables
Q input variable for menu

Print@program
X screen PRINT AT variable
N Dragon co-ordinate
A x co ordinate (transient variable
B y co ordinate (transient variable

CHR$ program
X screen PRINT AT variable
A Dragon CHR$
C$ colour code
B CHR$ code

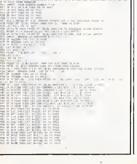
SET program
A,B,C, SET values
M,N values of x and y for PLOT instruction
Z screen PRINT AT variable
L$ colour code

The Spectrum conversion uses a PLOT instruction to ink in a 5 x 4 pixel block at the correct position on the screen Full details for the PLOT instruction are given in the program The instruction occupies five program lines. If the line increment of the program being entered is 10 then the instruction will nest between consecutive lines, if not then some adjustment to the line numbering will be needed

When typing the conversion program you will find that a number of the lines are similar in format, rather than type each line separately use the Spectrum's edit facility

When you have completed typing in your converted program, as long as the last line of the program contains a stop or GOTO instruction, then there is no point in removing lines 9908 to 9999

If there is no clear end to the program then enter 9908 STOP. If some of the lines of the utility program have been overwritten then remove any lines that interfere with the main program by entering just the line number Another possibility is to produce another program which you can call "delete" consisting of the line numbers 9908 to 9999 each followed by REM, which can be saved on tape immediately after the conversion program If this is loaded using the MERGE instruction it will overwrite the 'conversion' program


```
9900 REM DRAGON PRINT@ CHR$ AND SET CONVERSION UTILITY PROGRAM
9901 REM BY R.A HOULTON JAN 1984
```

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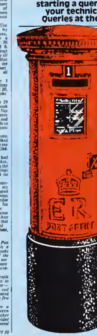


Books: the good... and the disasters

I have taken your magazine for the last five months and I am very interested in comments on programs that do not work from listings in books and magazines I own a VIC-20 and several of my friends and relations have an assortment of computers so that between us we can solve most problems

I bought a book by Tim Hartnell, published by Interface Publications, called Symphony for a Melancholy Computer 50 Programs for a VIC 20 It stated that all the listings had been checked. They all worked perfectly Any that did not at first was the result of errors on my part When corrected they all worked

A short time later I bought another book, Sixty Programs for the VIC 20, published by Pan Books This book is a disaster

I now have on tape 29 programs from the book for the VIC up to 16K Not one works without your having to spend hours and gaining help from friends to make even the simple ones appear on the screen

Six times the computer has gone away and sulked and twice the phrase "FORMULA TOO COMPLEX" has appeared

To make sure that I had not made any mistakes, other people have taken the book and tried the listings on their VIC-20s Still no good

My son has a Commodore 64 and he saw my book before I had entered any of the listings and went out and bought a similar book, also from Pan, for the M Another disaster

What comments do your readers care to make? Any recommended books that work will be appreciated

P R Taylor, Northfield, Birmingham

A spokeswoman for Pan Books said "There is a massive error in both books which makes many of the programs impossible to use

"This has been extensively advertised and bookshops have been told

"We are asking people who bought the books to send a proof of purchase — like the title page — and they will receive a reprinted copy of their book in a few weeks

"These books were a joint venture between ourselves and another company which provided the programs from several authors "

Pan Books is at 18 20 Cavaye Place, London EC4A 1AB

● Mr Taylor also mentions magazine listings and readers may like to know how these are prepared for publication in Home Computing Weekly

Programs from readers are accepted on cassette only — we do not publish contributors' own listings — and then tested for quality in our computer room

Those chosen for publication are printed out by us and reproduced photographically in the magazine

Microdrive, Sir Clive

I read with interest Stephen Botcher's letter in HCW 49 I have had my Spectrum 48K since October 1982 with a promise that I would get an order form for the ZX Microdrives as soon as they are available After letters not answered and phone calls — the last one a week past — I'm still waiting Here's a letter for Sir Uncle Clive

Dear Uncle Clive

You sent me last year a lovely leaflet, telling me I would soon receive an order form for a ZX Microdrive.
Alas! It has never been received!,
Alas! I seek it here
I seek it there
I seek it in every way
I try by letter
I try by phone
and a little bird says "Sinclair Research"
Please hold the line
We will be with you in ten minutes time'
or was it "Apple-Blossom time"?
We seek it here We seek it there. We seek that elusive microdrive
Be it on the launch pad or up in space That elusive interface
I look around and it is not in this place
Dear Uncle Clive, when will it be available?

A.J Russell, Street, Somerset

More Texas phone lines

Here are some additional lines for the TI-99/4A Texas Telephones program (HCW 49) which readers may find amusing

Well done, HCW, for your excellent magazine and for supporting the TI — they both give my family hours of fun The TI is an excellent computer Ours will never be discarded and left to rot in the attic It will be worn out with constant use long before then

Keep up the good work

```
30 GOSUB 5080
675 GOSUB 5180
5080 CALL CLEAR
5090 PRINT "WHAT IS
  YOUR NAME?"
5095 PRINT "", N$
5110 IF N$ = "" THEN
  5090
5120 PRINT ""
5130 PRINT "WHAT IS
  YOUR PHONE NUM-
  BER?)"
5140 PRINT "", T$
5150 INPUT T$
5160 IF T$ = "" THEN
  5130
5170 RETURN
5180 PRINT "HELLO, IS
  THAT", T$
5185 PRINT ""
5190 PRINT "COULD I
  SPEAK TO", N$
5200 FOR DELAY = 1
  TO 2000
5210 NEXT DELAY
5220 CALL CLEAR
5230 RETURN
```

Maureen Ashworth, Accrington, Lancs

Letter letter

As printed, the Spectrum Renumber program in HCW 30 does not work. However, only a minor change is necessary to make it an excellent program

Change the first line to '9500 LET Z=0 REM Renumber by N DORE' and all will be well

For the technically minded the program needs to have Z as the first variable in the area of memory reserved for variables Variables are stored in order of first occurence As the program is listed the GOTO 9980 in line 9501 means that the n in the FOR-NEXT loop is the first variable used When line 9620 looks for the value of Z in the variable area it finds the last value of n and so corrupts GOTO and GOSUB line numbers

N W Jinks, Sutton, Surrey ■

Try your luck, but don't risk more than £1,000

Are you a high roller? Will Lady Luck be with you when you play Richard Ikin's American dice game? He wrote it for the unexpanded VIC-20

Craps is played by betting on the outcome of rolling two dice

You win if you throw a seven or 11

You lose if your total is two, three or 12

How it works

11 POKE for screen colour with cyan border and black screen

12-21 title screen

30-80 instructions

220 sets screen colour to light orange with green border and blue lettering

260-280 variables A$, B$ and C$ are set to the lines of the dice picture

295-400 get starting capital and first bet. Lines 310-380 are used again in the game

1000-1095 win subroutine

1110-1210 lose subroutine

1300-1302 subroutine which POKEs a coloured band at the top and bottom of the screen

1400-1403 subroutine which prints title on the screen when game is in progress

If you throw one, four, five, six, eight, nine or 10 you must keep throwing until you get your original number.

You also lose if your first score is seven.

You can decide on your starting capital, but I would advise you to limit bets to £1,000 so as not to disturb the screen layout. If you convert to another micro this won't apply.

The control characters are explained in the hints on conversion section.

Hints on conversion

Main points to bear in mind are the screen colours in lines 11, 220 and 1300

POKEs and other figures are

7680 start of screen memory

8185 last location in screen memory

30720 difference between end of screen memory and start of colour memory

36878 volume

36876 soprano voice

Control characters (all in reverse field)

Q cursor down one line

E print white

R inverse video

P1 yellow

Low horizontal line end reverse video

Horizontal arrow blue

S cursor home without clearing screen

Backward C cursor right one place

Heart clear screen

Note: One reverse Q symbol (cursor down one line) should be removed from line 880

Main variables

D1, D2 dice

T sum of two dice

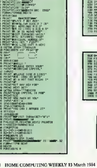
W bet

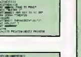
C capital

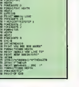
A$ top of die

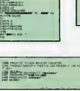
B$ side edges of die

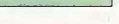
C$ bottom of die











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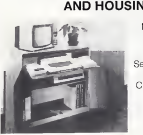

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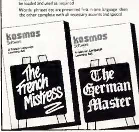

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Get more into your Microdrive — and make it fast

Sinclair guarantees 85K per Microdrive cartridge, but Simon N. Goodwin has got up to 97K. He explains how to boost capacity... and speed

A tiny tape cartridge slots into Sinclair's Microdrive — make them work harder for you

When Sinclair announced the Microdrives they were said to have a capacity of 100K per cartridge. By the time the drives were in production this figure had shrunk to 85K, and often cartridges have an even lower capacity — one new cartridge we tried would store only 10K!

Sinclair will replace cartridges which have a capacity of less than 85K, but it would be useful to be able to fix the problem at home, especially if the end result would be even more space. To understand how the same cartridge can have an unpredictable capacity, you need to know a little about the way the drives work.

The Microdrive is, in principle, little different from a stereo tape recorder. The tape is only 1/10th of an inch wide since only two tracks are used, rather than the four (stereo, both sides) of an audio cassette. The tape is also connected end-to-end in a loop (like the old eight-track cartridges), so if it winds on long enough every point will be passed. It takes about seven seconds to wind through the entire five metre loop.

Before a cartridge can be used it must be formatted. A detailed description of this process is in **Ian Logan's Spectrum Microdrive Book**. For our purposes all we need to know is that the format operation works by writing about 200 short blocks of data onto the tape and then trying to read them back. A record is kept of which blocks are read without errors.

The final capacity of the tape is calculated from the number of error-free blocks divided by two (since each block holds ½K).

The capacity of a tape, therefore, varies depending upon the number of blocks which give errors during formatting. These are marked as unusable during formatting, so they can't be reclaimed without formatting the cartridge again — and losing the contents in the process.

In practice, the capacity of any single cartridge seems to vary a great deal. You might format it once and be told that only 35K is free, and then try again and find 78K usable. The effect seems to be determined by two factors.

Firstly, the performance of a cartridge varies depending upon how it has been physically treated before formatting. The worst capacities we recorded were for cartridges just received through the post. Perhaps a cartridge also becomes more reliable once it has been "run in"? Anyhow, repeated formatting of cartridges produces improved results. Slight folds and twists in the tape may iron themselves out as the tape spins.

The second reason is a little more technical, and stems from the way blocks are recorded. There are gaps between each block, which contain no information. Some blocks on the tape "fail" during formatting because there are small imperfections on the magnetic material (there is always one fault where the tape is spliced into a loop).

The position of the tape when the format operation starts determines whether or not gaps and flaws coincide. There's no easy way to vary the gap between blocks so as to dodge all the flaws, but slightly different starting positions will clearly produce different results. Each block occupies about 25mm of tape, with the gap taking up about 7mm, easily enough for a small fold or bend which would be enough to cause a formatting fault.

The short program here, **Format Optimiser**, attempts to solve both problems by repeatedly formatting a cartridge and analysing the resultant capacity. The program is fairly simple in operation, although it uses a couple of obscure commands.

It takes a few minutes to run — the longer it runs the better the results will be — but the wait should be well worth it. In tests it pushed the capacity of our cartridges to 95-97K, compared with Sinclair's guaranteed figure of 85K. Some of the cartridges used had previously only given a capacity of 30-40K!

To use the program you should enter and run it with the tape to be tested in Microdrive 1. Remember that the tests will scrub any data already on the tape. First you are asked to enter the number of test scans to be performed. 15 is a sensible reply — each test takes about 45 seconds (more for an especially sick cartridge) and there doesn't seem to be much advantage to be gained from using more than 20 scans.

You are then asked to type the name with which the cartridge is to be formatted. The usual rules apply: enter up to 10 characters. Once you've typed an acceptable name the Microdrive motor will start and the tape will be repeatedly scanned. After each scan the number of usable kilobytes is displayed.

Once all of the tests have been performed the computer displays the best result found, and it tries again, repeatedly formatting the cartridge until that result (or better) is achieved again. The catalogue of the tape is displayed and the program stops.

On page 13 of the Microdrive manual users are warned that cartridges will not last forever and told that the drive will perform increasingly slowly as cartridges age. This is a fairly blatant exhortation to spend another £4.95 on a replacement cartridge, but there is an alternative which will prolong the life of the tape for a while.

Access to the tape becomes slow because the tape gets worn

```
  10 PRINT "ZX MICRODRIVE"
  20 PRINT '"FORMAT OPTIMISER"
  30 PRINT '" 1984 SIMON N GOODW
IN"''
  40 INPUT "Enter number of test
 attempts";scans
  50 IF scans<1 THEN GO TO 40
  60 INPUT "Enter cartridge name
";n$
  70 LET best=0: POKE 23750,5
  80 FOR s=1 TO scans
  90 GO SUB 500
 100 PRINT free;"K free",
 110 IF free>best THEN LET best=
free
 120 NEXT s
 130 PRINT ''"Best after ";scans
;" scans ";BEST;"k."
 140 PRINT '"Now formatting to t
hat capacity."
 150 GO SUB 500
 160 ERASE "m";1;"Test cat"
 170 PRINT "Catalogue of ";
 180 CAT 1
 190 STOP
 470 REM ***********************
 480 REM Routine to check space
 490 REM ***********************
 500 FORMAT "m";1;n$
 510 OPEN £4;"m";1;"Test cat"
 520 CAT £4,1
 530 CLOSE £4: PAUSE 100
 540 OPEN £4;"m";1;"Test cat"
 550 INPUT £4;a$;b$;c$;e$;: LET
free=VAL e$
 560 CLOSE £4: PAUSE 100: RETURN
```

and twisted with heavy use. Repeated attempts may be needed to fetch the data without errors. The Spectrum automatically tries to load a block over and over gain if an error occurs, unless it is formatting.

If you copy your data to tape and then use my program to re-format the cartridge you will find that the cartridge responds more quickly for some time thanks to the "ironing" effect of repeated formatting and the way the program skips the worst parts of the tape.

Of course, this approach is rather akin to warming up radio batteries — it works a few times but becomes steadily less effective!

Eventually even this program will be unable to patch up the damage and you won't be able to get much capacity out of the cartridge. At this point you pick up your chequebook...

Most of the program should be fairly straightforward to anyone familiar with Microdrive commands.

The POKE in line 70 alters the border colours during Microdrive output to cyan and white rather than the normal irritating black and white: use POKE 23750,7 to get rid of the flashing altogether (assuming you haven't changed the Spectrum display from the usual black on white).

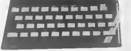
The loop between lines 80 and 120 repeatedly scans the tape, storing the best capacity so far (sensibly enough) in the variable "best". Line 150 repeatedly formats the tape until the "best" capacity is achieved or exceeded, and line 160 deletes the temporary file used by the program.

The subroutine at line 500 is the heart of the program. Notice that our printer has patriotically printed pound signs in place of the hashes used to denote streams. The subroutine formats the cartridge and then sends a CAT of the resultant format to the file named "Test cat". This has the effect of shaking the tape up a bit and it also enables the code of line 550 to extract the "free space" figure from the file.

The two-second PAUSE statements are rather a mystery. The program fails sometimes if they are missed out, yet there is no obvious reason why. Perhaps the Microdrive uses some interrupt-driven timings, in which case a shorter delay would suffice. Perhaps the cogwheels just get cobbled if a file is opened as soon as it was closed. In any case, the code presented does work, so we see little reason for changing it!

This simple program substantially increases the typical capacity of a Microdrive cartridge, and it avoids the need to laboriously type FORMAT commands over and over again.

As a side effect it speeds up the system by reducing the number of "bad blocks" which must be skipped over while saving and loading.



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Cases Computer Simulations, 14 Langton Way, London SE3 7TL

Find out if you can succeed where Freddie Laker failed. The name of your company is L AIR. Short for Laker Airways?

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The information provided is helpful, but it may take you a little while to understand the graphs. A thoroughly enjoyable game. **M.B**

instructions	95%
playability	95%
graphics	n/a%
value for money	100%

★ ★ ★ ★ ★

Change to a new lifestyle

How would you fare as a farm manager, a stranded seafarer, a struggling oil magnate, a Viking chieftan or another Freddie Laker?

Dallas Electron £6.95

Cases Computer Simulations, 14 Langton Way, London SE3 7TL

Now you have the opportunity to give JR a taste of his own medicine.

The screen displays Texas with map reference letters on the left and top. On the right is the state of your account. You have $100m in your account. Before you can begin you give your company a name.

The idea is to amass enough to take control of "J.R. Ewing Associates". This you do by getting a survey done on as many areas as you want, using the map references. This seismic survey at times can give you wrong reports, so use them as guide lines only. When bids for oil concessions are asked for, you may make your bid. If accepted you are free to explore. At all times the cost of moving the platform and drilling is indicated, and the state of J.R. Ewing Associates' finances is displayed from time to time.

You may be able to go into production and lay pipelines. This increases your assets and helps you in the takeover bid. If you can survive the tornado, sabotage, earthquakes etc., you'll be able to take over J.R.'s empire. If you fail, he will demand your resignation. **M.B.**

instructions	90%
playability	90%
graphics	n/a
value for money	100%

★ ★ ★ ★

Viking Dragon 32 £7.95

Dragon Data, Kenfig Industrial Estate Margam, Port Talbot

A simulation of running a Viking holding in the year 750 AD. Basically text, a graphic representation of your holding is given at one point of the game.

You have to decide what to buy and sell, the amount of tax to be levied and how much food to give to the farm labourers, called thralls. There are seven ranks on the way to king/queen which when achieved signals the end of the game.

When each game begins you give the number of players — up to four — and their names. You also choose the difficulty level of up to nine. The success or failure of each player depends upon the answers given to a series of questions in each round which covers one year.

If the taxes are too high the thralls may revolt. Plague can overcome your holding or raiders may arrive to kill and steal. Good management can prevent any of these occurrences.

The instructions are given in a booklet and the cassette comes nicely packaged in a video type box.

A rather enjoyable and unusual game. **J.E.M.**

instructions	70%
playability	70%
graphics	n/a
value for money	70%

★ ★ ★ ★

Corn Cropper Electron £6.95

Cases Computer Simulations, 14 Langton Way, London SE3 7TL

If you want a quiet life after zapping aliens, try this. Your objective as manager is to increase assets to £250,000.

Initially you have 30 acres, all of which can be cultivated. To make proper decisions you have commands to help you to get the most out of your land. You may also ask for the weather forecast for making decisions about irrigation. Like all forecasts, this can be wrong. A crop status report will give you the up to date condition of your crops. All these are clearly indicated.

Problems like drought, insect attacks, seed eaten by rats and crops destroyed by frost and fire are included.

There are five levels of difficulty. At the easiest you are entitled to EEC subsidy. There is also a level for coming out of the Common Market — maybe to please Tony Benn.

Corn Cropper is enjoyable while being instructive. It may be difficult to understand balance sheets and accounts if you have not seen them before. The perplexing point is how to lay off temporary workers hired for harvesting. Their wages are so high they must belong to a very good union. **M.B.**

instructions	95%
playability	95%
graphics	n/a
value for money	95%

★ ★ ★ ★ ★

Spectrum Safari 48K Spectrum £5.95

CDS Micro Systems, 10 Westfield Close, Tickhill Doncaster, S Yorks

Finding yourself on an island, graphically illustrated, your task is to accumulate Rubloons in an attempt to buy a boat and escape. However, each man in your party consumes food every time you move, and each village can only be visited once. Tough stuff, huh? Wait till you come across one of the strange animals lurking in the jungle!

Each one sets you a task which is represented by a graphic game such as dodge the crocs, the secretive koala bear, the gambling gorilla, and would you believe, a kicking sheep? You accumulate 500 Rubloons per man for each task successfully completed, but lose a man if you fail. There are 10 such challenges.

Graphics are reasonable, though a little crude, but it's difficult to cram 10 games and a master program into 48K in glorious colour. The charm undoubtedly lies in the animal challenges, which require intelligence, dexterity and fast reactions. There is a practice mode.

One of the few programs that might exercise your intellect and still be fun! **D.M.**

instructions	80%
playability	90%
graphics	70%
value for money	95%

★ ★ ★ ★ ★

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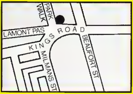
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Abyss
Electron £6.95

Cases Computer Simulations, 14 Langton Way, London SE3 7TL

To avoid falling into the abyss you need to use your knowledge and skill of arcade games

On the screen is displayed a grid with openings. You can travel in any direction When you reach an opening you are given a task before you can enter and proceed If you fail the Abyss claims your life Tasks may vary from shooting down a giant spider to doing a monster's homework Not even completing these ensures you safety — you may be unlucky to have chosen an old bridge which gives way

Graphics are few, and of moderate quality These do not in any way interfere with the enjoyment of playing the game best with two or three players My only criticism is that at times one has to be a super fast reader to read the instructions and complete your task It would be much better if there was a facility to let the computer know that you were ready to proceed after you had read the instructions

In spite of this, an original game well worth an investment

M.B

instructions	70%
playability	95%
graphics	70%
value for money	100%

★ ★ ★ ★ ★

Jammin'
CBM 64 £6.95

Taskset, 13 High St, Bridlington YO16 4PR

It's nice to play a game which is just great fun and doesn't involve any violence

The scenario is a little abstract It involves helping a Rastafarian called Rankin Rodney retrieve four musical instruments. The emphasis is on music and colours Each screen has music (there are 16 different tunes) A nice touch is that each tune consists of three parts (bass, drums and melody) and the music changes depending on what is going on

The instruments sit in areas of different colours and our hero must move around on moving walkways of coloured discs Movement is impeded by several features First there are two nasties "bum notes" and an unnamed character, who will try to take the instruments back Dangerous creatures called "distortion" will take one of your lives if you touch them Finally, you can only move on one colour at a time and it is necessary to change colours from time to time Full options for difficulty, starting screen number of lives and pause

Technically, a very smooth program with excellent music superb colour and hilarious animation

A W.

instructions	60%
playability	95%
graphics	90%
value for money	100%

★ ★ ★ ★ ★

Silicon
Atari £9.99

Romik, 272 Argyll Ave, Slough, Berks

Silicon brings you the internal world of the microprocessor, à la the film "Tron"

On loading the screen is set up for a four-way scroll over a network of gold lines overlaid on a black background The lines represent the circuitry of a C P U

Your task is to collect stray binary bits within the processor using a joystick-controlled android called M A D , or Miniature Android Debugger The bits are shown as pulsating geometric forms When MAD has a maximum load of four bits they are taken to an output port in the top right hand corner of the chip layout and discharged.

There are other difficulties Insectile bugs wander along transmission lines, contact with them is deadly And a superbug, called a glitch, will announce its occasional presence with the sound of a quickening heartbeat Unless found and destroyed, it will detonate and you will lose one of your three lives

Clearing a chip or zapping a glitch brings bonus points There are many levels of play

A neat little game enjoyable but not remarkable It will probably find a home on the shelves of fast action maze game enthusiasts

T A

instructions	60%
playability	75%
graphics	80%
value for money	90%

★ ★ ★ ★

Wheelie
48K Spectrum
£5.95

Microsphere 72 Roseberry Rd, London N10 2LA

The acid test of a game is its long term appeal and, having played many on my Spectrum, one of the few to pass this test is Hotfoot, an earlier Microsphere offering Wheelie is a game of similar quality

You ride your motor cycle through a dark forest in search of the ghost rider Being a British forest it has such delights as abandoned cars and buses to leap over along with perils like bouncing hedgehogs and ice patches while you must watch your fuel levels and speed From time to time you find petrol stations where you may fill up On finding the ghost rider you have to race him back If successful you are given a code to move to the next skill level, a sort of 'O' level in Eddie Kiddism

The game is claimed to work with most joysticks but I found the keyboard very satisfactory Graphics are top quality and there is good use of Spectrum sound to simulate the engine of your Zedexaki bike A demonstration sequence is included

A very addictive game likely to cause a great deal of squabbling over whose turn it is next

D J.

instructions	90%
playability	95%
graphics	95%
value for money	95%

★ ★ ★ ★ ★

Killer Knight
48K Spectrum
£5.95

Phipps Associates, 172 Kingston Rd, Ewell, Surrey KT19 0SJ

A poor version of Krazy Kong, this program loaded correctly once in four tries The other times it left out the man to play with making it a pointless exercise When it did run the first screen was never conquered, so further screens were not seen, though a young friend says they exist and that the obstacles do become more difficult

Full instructions appeared after part of the program had been loaded and were not available again The loading screen of a coloured Black Knight riding towards a castle surpassed in quality the graphics used in the game Other than to score points, the object is to reach the top of the screen in order to rescue your companion, who has been captured by the Killer Knight after you have both been transported back in time He throws cannon balls, without moving, to prevent you climbing ladders, jumping holes and walking along An umbrella can be used once when jumping if picked up before climbing the first ladder The player has four lives but even so I could not reach higher than the fourth floor — far less a higher screen

T W

instructions	60%
playability	30%
graphics	40%
value for money	30%

★ ★

You're in the Gunners and the enemy is firing back...

You'll need careful calculations to win at P.D. Myring's two-player Artillery game. It runs on the unexpanded TI-99/4A

Ideally suited to TI BASIC, my Artillery game can use its high-resolution graphics and multiple graphics without being made useless by its speed limitations

There are two heavy artillery guns on a random piece of terrain — two level plains with a plateau between them

Each gun fires in turn and has to hit the opposing gun to win

Shell trajectory is determined by launch angle and speed, gravity and wind velocity, again random, but constant throughout the game

Shells cannot pass through the central plateau or any of the ground squares

There is a short delay at the beginning while display lists, and so on, are set up. Then the terrain, guns and titling are printed

When the green prompt square appears at top left, enter muzzle velocity and angle of elevation, pressing enter after each

Mistakes can be corrected provided the enter key has not been pressed To do this, press D — the cursor right key — and the right-most digit will be erased

When the guns are fired the shell path appears on the screen and explosions occur when either the ground or a gun have been hit

Hints on conversion

TI BASIC is fairly standard with two main exceptions Single statement lines are used and subroutines for graphics and sound are available, prefixed with CALL, as detailed below

CALL CLEAR clears screen

CALL SCREEN defines screen colour

CALL CHAR defines a character with a 16-digit hex string from an eight by eight grid Other machines will use a different method

CALL COLOUR (character set, foreground, background) sets colour of character

CALL HCHAR (row, column, character code, number of repeats) places character on screen at co-ordinates specified and optionally repeats character horizontally

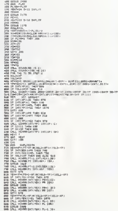
CALL VCHAR similar to HCHAR but repeats character vertically

CALL GCHAR (row, column, variable) similar to a screen PEEK on other machines Gives the ASCII code at the given screen co-ordinates

CALL SOUND (D,F,V) gives sound of duration D, frequency F and volume V Three sounds can be produced at once

Old shell paths remain on the screen as a guide, but some will be over-written by subsequent firing

The blue gun on the left fires first and, as the first player to score a direct hit wins, it has the advantage



How it works

140 GOSUB to set up colours, characters

160 GOSUB to set up screen — terrain, cannons, etc

170 game start

190-260 player enters speed and angle data

210-250 GOSUB to "entry" subroutine

280-290 convert speed and angle data into X & Y velocities

300-400 select correct gun and firing position

430-660 main loop — determine behaviour of shell in flight

460-470 the crucial lines — formula for path of flight

510 determine which shell-path character is printed

520-610 determine if shell has hit ground, and if so, where Incorporates 700-1160

620-660 print next shell-path character

700-1160 detects where shell has hit ground, and which explosion and crater characters to use

710,810,890,970 & 1070 all formulae to find exact point at which shell hits ground/hill Then the correct nearest square can be used for explosion and crater.

1170-1470 subroutine for entering shell speed and angle data

1250 detects enter key pressed

1280 detects D key pressed

1270 & 1280 rejects keys pressed which are not numerals

1290-1280 shift all existing numbers to left, and prints new one

1370-1430 shift all existing numbers to right and eliminates LSD — for entry editing

1480-1520 print string label at points specified by XLB and YLB

1530-1800 direct hit routine Prints explosion, plays fanfare etc

1810-1870 subroutine for normal explosion sound

1880-2080 subroutine sets up colours

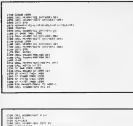
2090-2380 subroutine sets up characters

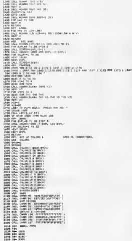
2390-2870 determines random shape of terrain Prints terrain, guns, etc

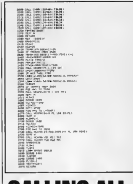
2810 determines random wind speed and direction

So players could take alternate ends Perhaps the last loser or least experienced player could get blue

Useful muzzle velocity is 500-1,100 feet per second and if strong winds are blowing with you it's best to fire high







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Spectipede
£5.50

R & R, 34 Bourton Rd, Tuffley, Gloucester GL4 0LE

Good arcade games spawn variations, and Centipede is no exception — as this version shows. Joystick compatible, Spectipede responded well to keyboard controls. The third screen gave instructions and scoring with the opportunity for more instructions. Viewing this for too long starts an autogame then returning to title screen.

One or two people can play to shoot the yellow Spectipede as it moves through a mushroom forest. When shot it breaks into two then four, leaving new mushrooms behind. Three shots are needed to eradicate the mushrooms while two kill the mushroom creating fleas that double their speed between hits. Scoring is high, being recorded along screen top and a bonus of 1,500 added for each screen cleared of spectipedes and a bonus life every 20 000 points.

Graphics and sound are not up to present standards — nor is returning to the title after each game — and it will need more than spiders that move their legs upon reaching the screen bottom to make the masses buy it. Some young friends found it addictive, partly because of its ease of play and because of its slow speed and lack of subtlety.

T.W.

instructions	100%
playability	90%
graphics	80%
value for money	50%

★ ★ ★

Push Off
£5.95

Software Projects, Bear Brand Complex, Allerton Rd Woolton, Liverpool L25 7SF

It's a hard life being a ladybird, at least that's what the inlay card tells me.

Continually being chased around teh garden her only means of defence is to surround herself with a barrier of bricks. Now there's a novelty for you — a brick laying ladybird. But then anything, or nearly anything, is possible on a Spectrum. All you need is imagination, and the right kind of program to stimulate that imagination.

But, of course, that stimulation has to be maintained throughout the game, otherwise interest in the game soon flags. Bertha, the ladybird, is quite easily controlled around the screen, and I found the movement very smooth.

Unfortunately I personally couldn't maintain enough interest to play for more than half an hour at a time. I tried the game a total of five times, and could find no bugs or loading problems.

B.B.

instructions	100%
playability	75%
graphics	90%
value for money	80%

★ ★ ★ ★

House of the Living Dead
48K £5.95

Phipps Associates, 172 Kingston Rd, Ewell, Surrey KT19 0SD

The instructions, of which only the last paragraph is really relevant, appear in an interesting type after the tape has run for a short time and are not accessible again. The scene is set by a noisy loading screen of running skeletons, flapping dragon like bats and hands.

On each level four parts of a cross must be taken to the centre of a maze, evading, on level one, a bat, on level two a skeleton and a bat, on level three, two bats and a skeleton, and on level four, two skeletons and a bat. If any other stories exist I have not the skill required to reach them, even with three lives!

Scoring is for every move, plus additions for making the crosses on the first three stories. Compatible with Kempston joystick, though the insert did not advertise this fact.

Not very addictive to the sophisticated gamesperson, its graphics and use of sound though interesting are not to present standards though, when dying, the player dances a fascinating jig!

T.W.

instructions	90%
playability	75%
graphics	70%
value for money	80%

★ ★ ★ ★

Bubble Trouble
48K £5.50

Arcade, Technology House, 32 Chislehurst Rd, Orpington, Kent

A deceptively simple game. You are a burglar, moving by cursor key round a visible maze, picking up visible treasures. When you've got all these bonus points begin to appear for collection in the same way, ranging through 200, 500 700, 1000 and Mystery. Sounds easy? But there is a time limit and you are pursued by a bubble, intent upon your suffocation. It may be fended off temporarily, by pressing Fire (zero) but there is a 10 second delay before you can use Fire again.

When time is up, if you still have lives, you move onto the next screen. Each screen has different possible high scores, degrees of difficulty and individual time limits and there are 50 screens. A nice option is that you can choose your own start screen and there are three skill levels plus a Hold button.

Insert instructions are simple to follow and many joysticks are supported. Graphics are excellent — suffocation looks very nasty indeed — and colour and sand have been used to good effect.

A fun game for all ages which I thoroughly enjoyed. It was noticeable that my young expert had to be dragged away.

D.C.

instructions	95%
playability	95%
graphics	90%
value for money	90%

★ ★ ★ ★ ★

Paratroopers
£5.99

Rabbit, 380 Station Rd, Harrow, Middx HA1 2DE

The addition of a hall of fame and levels of difficulty would have raised this program from being a child's game. A gormless rabbit appears in the first loading screen, then paratroopers, before instructions and an opportunity to define the keys used — leading one to expect a high quality game.

This bloodthirsty game's screen is a simple blue sky and green ground with a well-drawn anti aircraft gun in the centre of the screen bottom. Helicopters fly from right and left dropping paratroopers, some without parachutes that explode upon hitting the ground.

Your task is to shoot helicopters and paratroopers or — if you enjoy being sneaky — parachutes, before three land and move off, reappearing as a tank that blasts you out of existence. Beware the kamikaze paratrooper who blows you up by landing on you.

Fair use has been made of the Spectrum's graphics and sound, the key response is food and it is compatible with Protek joysticks. Only five shots can be on screen at any one time, and the gun stops firing when moving. The shots cost points that are regained by shooting helicopters or paratroopers. Addictive to the younger players or those who find it difficult to score in other games.

T.W.

instructions	60%
playability	80%
graphics	65%
value for money	60%

★ ★ ★

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ADDRESS MANAGER (16/48K)

Works on the 16K and 48K Spectrum in 48K it will store file select and retrieve over 400 full addresses (over 1500 individual names) Dynamic Memory Management and compression techniques makes all this possible and there's a lot more ● FULL SCREEN INPUT and EDITING — see it as a page as it happens with insert delete and TAB Commands ● MULTIPLE INDEXING — 3 way user-defined index enables you to define catalogue select and print entries as needed (essential for the more sophisticated applications) ● INSTANT RESPONSE — yes this program is very very fast ● SUPER FRIENDLY — extremely easy to use and efficient in a way that BASIC can never be Standard Program uses ZX Printer

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DRAGON 32 PROGRAM

Give yourself some keyboard exercise

Short but fun, this Dragon program by Nigel Thomas is based on the game of squash

A one-player variation of the bat 'n' ball style games, Squash uses the arrow keys to move the bat. All instructions are included in the program

Variables

- **S** current score
- **HS** high score
- **L** number of lives
- **O** delay loop for keeping instructions on screen
- **A** loop to draw walls
- **X** horizontal position of ball
- **Y** vertical position of ball
- **XX** position of bat
- **XY** position of ball in PRINT form
- **D** direction in which ball is heading
- **AS** INKEY to find if another game is wanted
- **XS** bat graphics

How it works

- **10-60** instructions
- **70-90** reset variables
- **100-180** set up screen and check if end of game has been reached
- **190** defines bat
- **200-210** set position and direction of ball
- **220-230** put SCORE and LIVES at top of screen
- **240-250** set position of bat
- **260-310** move ball
- **320** converts ball's position to PRINT form
- **330** check if ball has been missed and if so deletes one life
- **340-430** check if ball has hit anything and changes direction accordingly
- **440-450** check if bat needs to be moved and if so moves it
- **460-470** put score at top of screen next to SCORE title and number of remaining lives next to LIVES
- **480** returns to main loop
- **490-530** end of game routine
- **540-580** another game?

```
10 CLS
20 PRINT@12,"squash";
30 PRINT@43,"########";
40 PRINT@99,"REBOUND THE BLACK SQUASH BALLWITH YOUR ORA
NGE RAQUET ONTO THE PURPLE WALLS TO SCORE AS MANY  POIN
TS AS POSSIBLE.CAN YOU GET  THE HIGHEST SCORE?YOU HAVE
THREELIVES IN WHICH TO GO IT IN, GOOD LUCK!"
50 PRINT@323,"USE THE LEFT AND RIGHT ARROW KEYS TO MOVE
 HORIZONTALLY. ITS  ONLY ONE POINT EVERYTIME YOU HIT TH
E BALL, SO GET CRACKING!"
60 FORO=0 TO 10000:NEXTO
70 HS=0
80 S=0
90 L=3
100 CLS5
110 IFL=0 THEN 490
120 FORA=32 TO 63
130 PRINT@A,CHR$(239);
140 PRINT@A-32,CHR$(128);
150 NEXTA
160 FORA=64 TO 448 STEP 32
170 PRINT@A,CHR$(239);:PRINT@A+31,CHR$(239);
180 NEXTA
190 X$=CHR$(255)+CHR$(255)+CHR$(255)
200 X=RND(10)+32:Y=27
210 D=RND(2)
220 PRINT@0,"score";
230 PRINT@16,"lives";
240 XX=450
250 PRINT@XX,X$;
260 SET(X,Y,5)
270 IFD=1 THEN X=X-1:Y=Y-1
280 IFD=2 THEN X=X+1:Y=Y-1
290 IFD=3 THEN X=X-1:Y=Y+1
300 IFD=4 THEN X=X+1:Y=Y+1
310 RESET(X,Y)
320 XY=INT(X/2)+448
330 IFY=29 THEN L=L-1:SOUND1,20:GOTO 100
340 IFX=2 AND Y=4 THEN D=4:SOUND120,1:GOTO 440
350 IFX=61 AND Y=4 THEN D=3:SOUND120,1:GOTO 440
360 IFX=2 THEN D=D+1:SOUND120,1:GOTO 440
370 IFX=61 THEN D=D-1:SOUND120,1:GOTO 440
380 IFY=4 THEN D=D+2:SOUND120,1:GOTO 440
390 IFY=27 AND XY=XX THEN D=D-2:SOUND120,1:S=S+1:GOTO 4
40
400 IFY=27 AND XY=XX+1 THEN D=D-2:SOUND120,1:S=S+1:GOTO
 440
410 IFY=27 AND XY=XX+2 THEN D=D-2:SOUND120,1:S=S+1:GOTO
 440
420 IFY=27 AND XY=XX-1 AND D=4 THEN D=1:SOUND120,1:S=S+
1:GOTO 440
430 IFY=27 AND XY=XX+3 AND D=3 THEN D=2:SOUND120,1:S=S+
1
440 IFPEEK(343)=223 AND XX>449 THEN PRINT@XX+2,CHR$(207
);:PRINT@XX-1,CHR$(255);:XX=XX-1
450 IFPEEK(344)=223 AND XX<476 THEN PRINT@XX,CHR$(207);
:PRINT@XX+3,CHR$(255);:XX=XX+1
460 PRINT@7,S;
470 PRINT@24,L;
480 GOTO250
490 CLS0
500 PRINT@41,"GAME OVER";
510 PRINT@165,"YOU SCORED";S;"POINTS",
```

```
520 IFS>HS THEN HS=S
530 PRINT@229,"HIGHEST SCORE IS",HS;"POINTS";
540 PRINT@456,"ANOTHER GO (Y/N)? ";
550 A$=INKEY$
560 IFA$="Y" THEN 80
570 IFA$="N" THEN CLS:END
580 GOTO 550
```

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BEST SELLERS

Top 30

1	Manic Miner	Software Projects	Spectrum (1)
2	Hunchback	Ocean	Spectrum (2)
3	3D Ant Attack	Quicksilva	Spectrum (5)
4	Jetpac	Ultimate	Spectrum (4)
5	The Hobbit	M House	Spectrum (3)
6	Atic Atac	Ultimate	Spectrum (9)
7	Lunar Jetman	Ultimate	Spectrum (6)
8	Valhalla	Legend	Spectrum (8)
9	Harrier Attack	Durell	Spectrum (7)
10	Hunchback	Ocean	CBM 64 (10)
11	Chuckie Egg	A & F	Spectrum (13)
12	Falcon Patrol	Virgin	CBM 64 (11)
13	Hobbit	M House	CBM 64 (12)
14	The King	Microdeal	Dragon (17)
15	Frogger	Microdeal	Dragon (16)
16	Kong	Ocean	Spectrum (14)
17	Zoom	Imagine	Spectrum (16)
18	Chequered Flag	Psion	Spectrum (19)
19	Penetrator	M House	Spectrum (15)
20	Hunchback	Superior	BBC (21)
21	Cuthbert in the Jungle	Microdeal	Dragon (20)
22	Bear Bovver	Artic	Spectrum (—)
23	Buga Boo (The Flea)	Quicksilva	Spectrum (29)
24	Crazy Kong	Interceptor	CBM 64 (27)
25	Eskimo Eddie	Ocean	Spectrum (—)
26	Arcadia	Imagine	VIC 20 (23)
27	Chinese Juggler	Ocean	CBM 64 (—)
28	Snooker	Visons	VIC-20 (—)
29	Pedro	Imagine	Dragon (—)
30	Colossus Chess	CDS	CBM 64(—)

Compiled by PCS Distribution (0254 691211) and sanctioned by the Computer Trade Association Chart is for retail sales in individual outlets in the UK and Northern Ireland for the fortnight ended February 25

Top Ten programs for the Commodore 64

1	Chinese Juggler	Ocean (—)
2	Manic Miner	Software Projects (2)
3	Boogaboo (The Flea)	Quicksilva (3)
4	Revenge of the Mutant Camels	Llamasoft (4)
5	Mr Wimpy	Ocean (7)
6	Megawarz	Paramount (5)
7	Space Shuttle	Microdeal (6)
8	Falcon Patrol	Virgin (8)
9	Cosmic Convoy	Taskset (10)

Compiled by Websters Figures in brackets are last week's positions

Top Ten programs for the Dragon 32

1	Hungry Horace	Mel House (1)
2	Eight Ball	Microdeal (2)
3	Dragon Chess	Oasis (3)
4	Ugh	Softek (4)
5	Leggit	Imagine (7)
6	Up Periscope	Beyond (5)
7	Devil Assault	Microdeal (6)
8	Ring of Darkness	Wintersoft (—)
9	Frogger	Microdeal (9)
10	Skramble	Microdeal (—)

Compiled by Websters Figures in brackets are last week's positions

Top Ten programs for the VIC-20

1	Computer Wars	Thorn EMI (1)
2	M L B A T E T	Llamasoft (2)
3	Wizard and the princess	M House (4)
4	Snooker	Visions (—)
5	Paratrooper	Rabbit (9)
6	Arcadia	Imagine (9)
7	Catcha Snatcha	Imagine (6)
8	Gridrunner	Llamasoft (—)
9	Wacky Waiters	Imagine (7)
10	Jet Pac	Ultimate (5)

Compiled by Websters Figures in brackets are last week's positions

Top Ten programs for the ZX81

1	Flight Simulation	Sinclair (6)
2	Defenders	Quicksilva (3)
3	Invaders	Quicksilva (7)
4	Krazy Kong	PSS (8)
5	Football Manager	Addictive (2)
6	Hopper	PSS (—)
7	Space Raiders	Sinclair (4)
8	Meteors	DK tronics (—)
9	Mazogs	Bug Byte (—)
10	Espionage Island	Sinclair (9)

Compiled by Websters Figures in brackets are last week's positions

Top Ten programs for the Spectrum

1	Chequered Flag	Psion (2)
2	Atic Atac	Ultimate (1)
3	Flight Simulation	Psion (3)
4	Lunar Jetman	Ultimate (4)
5	Cyrus-IS Chess	Psion (—)
6	Ant Attack	Quicksilva (5)
7	Scuba Dive	Durell (7)
8	Pool	CDS (10)
9	Kong	Ocean (—)
10	Stonkers	Imagine (—)

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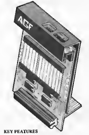

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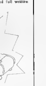

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Race your Spectrum... but with a difference

You'll need to think ahead carefully when you play James Wood's car racing game for the 48K Spectrum

My car racing program for the 48K Spectrum demands strategy and clear thinking.

For each section of track you enter which gear and how much acceleration and brake.

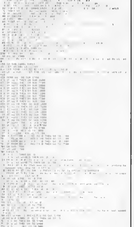
The computer then reports back on your speed, braking and engine temperature, along with details of the next section of track.

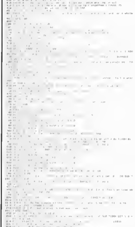
As it stands, you do two laps of the track with the chance of all four hazards — including bursting into flames — on both laps.

This can be changed by altering the figures in line 1130

I have not included a line-by-line breakdown of the program because, being mostly text, it is quite easy to follow the listing

Main variables
ti time per part course
tt total time
tp time penalty
sn speed now
sl speed limit
sg track section
al acceleration limit
bl brake limit
et engine time





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Which Salt? 32K BBC £6.95

Program Power 8/8a Regent St,
Chapel Allerton Leeds LS7 4PE

This is the first chemical simulation program I have seen for the BBC micro and it is a very good piece of work The idea is that you have to play the analytical chemist and discover from various tests in your armoury which of the possible substances you have in your jar They are all salts of various kinds and the joy is to identify both the cationic and anionic components of the salt then, having done so, place your reputation on the line and actually give your answers

What is special about this program is that by taking the approach it does, the learning of what could be boring facts (sometimes needed for examinations), becomes a pleasure It is many years since I have studied chemistry but I found some of the knowledge which I thought had gone forever floating back to the surface and I really did want to succeed

The program comes with a sheet of notes on the knowledge required and a specimen record sheet too Highly recommended for "O" level preparation What a pity there aren t more programs of this quality, style and price

D.C.

instructions	85%
ease of use	90%
display	60%
value for money	100%

★ ★ ★ ★ ★

The Alphabet VIC-20 £9.95

Commodore, 675 Ajax Ave, Slough, Berks

To be able to teach the five to eight year olds successfully you have to catch their attention and hold it long enough for them to learn

The aim of this package, part of Commodore's Teach and Test Series, is to familiarise children with letters of the alphabet There are two cassettes containing six programs and a booklet of instructions and a record sheet. The programs start with letter recognition and progress to test letter and sound recognition

To be able to recognise the letters and their sound children must hear them As the program does not use voice synthesis this cannot be done adequately However this is so easily taught by a mother with some paper, a pencil and assorted pictures that any computer program would need to be extra special to be worthwhile

Its poor animation, lack of sound and use of upper case characters detracted from its value To make the package worth buying it really needs some attractive animation, and the use of sound and voice synthesis Overall a very disappointing product Needs 16K expansion

M.W.

instructions	60%
ease of use	60%
display	50%
value for money	50%

★ ★

Marathon Commodore 64 £9.95

English Software P.O. Box 43, Manchester M60 3AD

A mental arithmetic test in which scoring is done by little men running across the top of the screen It's hardly a marathon — if the figures are to scale the distance can't be more than a hundred metres!

It s written for two people, or one person and the computer Two identical 3x3 arrays of numbers are shown, with a cursor in the middle of each When a sum appears you have to move your cursor with a joystick to cover the correct answer then press fire The fastest right answer wins If you're playing alone you win if you get it right before time runs out

You can choose addition subtraction, multiplication division or a mixture Whichever you choose, every fifth question is a "multiple" — you are given a number, and have to press the button when a multiple of it appears This part went haywire when I was playing The multiples appeared but not the original number

Skill level determines the time allowed, not the difficulty At higher levels it's more a test of reactions than ability

Not bad, compared with the other educational programs currently available **M.N.**

instructions	60%
ease of use	70%
display	70%
value for money	60%

★ ★ ★

Jigsaw Puzzle 32K BBC £9.95

Ega Beva, Central Trading Estate, 275-277 Bath Rd, Bristol

An excellent suite of programs for four to 13 year olds which combines entertainment with spatial learning

The tape is well packaged, has good instructions and gives four excellent pictures and five levels of difficulty Each picture takes seven minutes to build before being split into a number of blocks which the program then jumbles The player then has to rearrange them in their correct positions The pieces are moved round the screen by pressing the appropriate letters of the two pieces to be transposed

When the picture has been correctly assembled a tune plays and time taken and number of moves displayed

Unfortunately, level of play cannot be altered without reloading the picture but this will be less of a problem with a group of children than with an individual Also, the four pictures are identical to those used by the same company for its Sliding Block Puzzle tape

A good but limited educational game more suited for a group then an individual **J.H.D.**

	80%
instructions	60%
playability	90%
graphics	65%
value for money	

★ ★ ★

The Magic Shop 48K Spectrum 9.95

Five Ways, Arrow, 17-21 Cosway St, London W1P 6JD

At last — a breakthrough in home education! With a story book, story tape parent's book, overlay and computer program, this comprehensive package brings learning for the under eights right into the eighties

Parent and child follow the story, while listening to Toni Arthur reading it Then the program offers activities buying ingredients, giving change or making spells The selected activity, say "buying ingredients" states which side of the overlay to use, then five number lines 30p long appear, with magician, his cauldron over a fire and a purse of change above. The child buys the ingredients above the number line, counting how much it costs Using the coloured overlay, coin keys are pressed — with rubout key available If wrong, the magician shows how it should be done with large letters, using upper and lower case

The child will eventually be able to operate the program on its own The parent's guide finished with Away From the Computer Practice to reinforce what has been learnt

I cannot praise this program highly enough — try it with your child! **T.W.**

instructions	100%
ease of use	100%
display	100%
value for money	100%

★ ★ ★ ★ ★

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'Commodore made us buy an Atari'

The reply from P.M. Volsing (Commodore Owes It to Us — HCW 48), in response to F.E. Wilkes' letter After Sales Shock (HCW 46), prompts me to write to you

I am not at all surprised at Commodore's attitude to the failure of Mr Wilkes' RAMpack such a short time after the expiry of the warranty period. On November 18, 1983 we purchased a Commodore 64 in preference to the various computers available, because of its apparent graphics capabilities

Unfortunately, we were never able to ascertain these capabilities, because during the short period between November 18 and December 27 we had no fewer than five faulty 64s

By this time, the retailers had exhausted their supply of Commodore 64s and we had their display model on loan, pending their receipt of a further supply. Even this was not A1

On the return of the third 64, I telephoned Commodore to let them know the position and their only response was that we must be unfortunate and to take it back to the dealer. However, after five faulty ones, we felt they should be brought quite clearly into the picture, but their response in this regard was also unhelpful to say the least

Three of the 64s, as well as the loaned model, all had modular faults. Commodore's response was to send us detailed instructions for delving into the 64's innards to make adjustments ourselves! A very strange directive, bearing in mind that normally it is taboo to remove the outer casing of any electrical/mechanical equipment, under peril of invalidating the guarantee

Needless to say, their nonchalant and apathetic attitude left us with no alternative but to return the last machine to the retailer and obtain a refund

Unlike Martin Eckstein (HCW 43) we found the staff at the retailers Greens Electrical, were most helpful and courteous and did everything they could for us, when exchanging the faulty computers

A letter signed for John Baxter, the marketing manager of Commodore, expressed the opinion that we are the only customers he knows of to suffer in this way, but I am sure that myself and Mr Wilkes cannot be the only ones to have problems with Commodore equipment

However, following the final return of the last 64, we studied many hardware reviews and information and, after much deliberation, decided on the new Atari 600XL and I must say we are most impressed

The computer itself is very compact, looks very smart and is a joy to use, and our studying is now going great guns, thanks to Atari's superb Invitation to Programming courses. Not only this, but we have found Atari themselves to be extremely helpful and only too pleased to answer any queries via their customer relations department and their much-publicised "Helpline"

I only regret that we did not buy the Atari in the first place, but the difficulties with Commodore have made us appreciate our new 600XL all the more

We feel that once we are able to afford to purchase the 64K Memory Module, we will have, from our point of view, a computer second to none, and in our opinion far superior to the Commodore 64, and we would not hesitate to recommend the Atari to anyone considering buying a new computer

Sheila Maguire, Northampton

John Baxter, Commodore's UK marketing manager, said "Mrs Maguire is the only customer I know of to have experienced such an extraordinary series of events

"While there does seem to have been a fault in the first machine the difficulties Mrs Maguire describes with the replacements appear to be matters of simple adjustment of the machine, or her TV set, rather than faults

"If Mrs Maguire was concerned about making those adjustments I'm sure the dealer could have carried them out on the spot. Alternatively, she could have sent the computer straight back to us at Commodore and the problem would have been resolved immediately

"The notes accompanying our guarantee cards do point out that customers can return machines direct to us if they wish, without prejudice to their statutory rights.

"I have written to Mrs Maguire apologising for the inconvenience and adding that should she not be satisfied with the performance of the alternative she has chosen, I will personally provide her with a 64 direct from the factory at a special price."

Whoops!

The price of Capital Letters, a 48K Spectrum program reviewed in HCW 42, is £7.95 and not £9.95. This increases its value for money rating to about 85 per cent. Capital Letters is from Sinclair Research, 28 Stanhope Road, Camberley, Surrey

Due to line re-numbering, there was an error in the TI-99/4A listing of Laser Defence, which appeared in HCW 50. In line 1670 the figure between THEN and ELSE should be 1680

Last hope

I recently purchased a copy of The Castle, by Bug-Byte. It's a great game but I cannot get out of the maze. I have sat in my room for what seems like hours trying in all directions but I cannot get out. Also, I cannot get past the werewolf. Please, one of your readers must know how to solve these problems. You are my last hope

M. Logan, Hawick, Scotland

Speak and save

My congratulations to all those computerholics who type in endless DATA statements from program listings

But there is a simple solution. Have you tried reciting those statements on tape and playing them back when it comes to typing them in?

It's simple and easy, as long as you speak clearly, and will save tonnes of time!

Mainder Heer, aged 12, Leicester

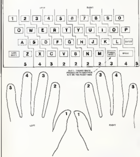
Touch typing on the Spectrum (or is it back to two fingers?)

Here's how Alan Tomkins tackled the problem of the Spectrum keyboard. Have you got any better ideas — apart from an add-on keyboard?

I wonder how touch typists manage to transfer their art to the Spectrum whose keyboard (unlike most other micros) has some radical differences from that of a typewriter:

- The typewriter has a long space-bar which can be activated by either thumb. However, the Spectrum has just a small space key on the far right.
- The typewriter has a separate caps shift key for each hand so that whilst a finger of one hand presses the key required the other hand takes care of pressing the caps shift. The Spectrum has only one caps shift for the left hand use.
- The Spectrum's symbol shift does not apply to the typewriter. On the Spectrum some of the commonest symbols require the pressing of the symbol shift and another key simultaneously with the same hand, for example ' ( ) ; " − + = ,

My attempted solution, using one of the standard methods of typewriter fingering, is shown in the diagram.



As you can see:

1 The space key is operated by the fourth finger. Although this key is the largest on the Spectrum, it is nevertheless in my view too small. Thus the fingering of the space key is not a problem, just inconvenient and slower than having a long space-bar.

2 The fingering of the caps shift really is a problem. The thumb certainly cannot be used on the caps shift as this makes many of the other letters unreachable with the correct fingers whereas using the fifth finger puts the hand out of position. What is the solution? I use the caps lock before each capital (even just single capitals) so that the hand is then freed to resume the correct position.

3 I press the symbol shift with the right thumb, nail downwards on the key, and then all other keys on this side are reachable at the same time with the correct fingers. This includes the comma and dot with the second and third fingers respectively.

Does any other virtuoso of the Spectrum have a better solution?

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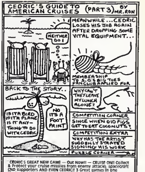
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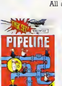

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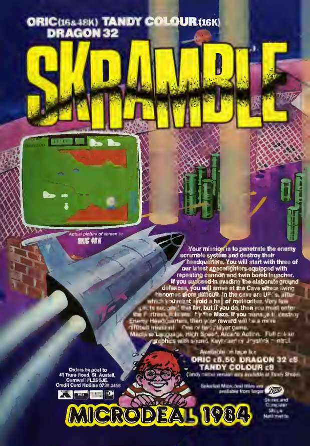

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